

amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



VOL. 48, No. 7

JULY 1980

FEATURED IN THIS ISSUE:

- ★ ***AMATEUR RADIO FOR THE CRUISING YACHTSMAN — Part 1***
- ★ ***A DECADE ON VHF — Part 2***
- ★ ***THE 1980 FEDERAL CONVENTION, ANNUAL REPORT***
- ★ ***REMEMBRANCE DAY CONTEST RULES 1980***
- ★ ***COLLECTORS CORNER — NUMBER 1***

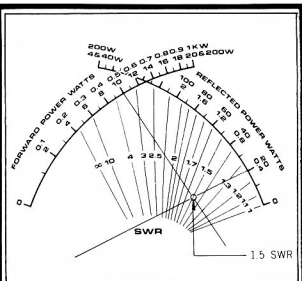
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JULY 1980

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PRICE: \$1.20

Registered Office:
3/105 Hawthorn Road,
Caulfield North 3161.

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Material should be sent direct to P.O. Box
150, Toorak, Vic., 3142, by the 25th of the
second month preceding publication. Phone:
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to the same address by the 1st of the month
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seller.

Typesetting: MUELLER INDUSTRIES
1a Levenswell Road, Moorabbin, 3189
Tel.: 553 0292

Printers: WAVERLEY OFFSET PUBLISHING
GROUP
Geddes Street, Mulgrave 3170

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Cover Photo



Navigation and Radio Area on a Cruising Yacht — See Article: "Amateur Radio for the Cruising Yachtsman", commencing on page 10.

Photo by Eddie Rooms VK4AER/MM

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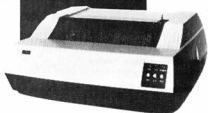


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Divisional Information (all broadcasts are on Sundays unless otherwise stated).

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Secretary — Mr. F. Robertson-Mudie VK1NVA/VZZ

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and Ch. 3 and 6. RTTY Sunday 0030Z

7045, 14090 kHz, Ch. 52, 0930Z 3545

kHz, Ch. 52.

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Secretary — Mr. G. F. Atkinson VK3FYA

Broadcasts — 1840, 3595, 7125 kHz — 53.03Z AM,

144.1 USB and Ch. 2 (5) repeater:

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Gen. Mtg. — 2nd Wed., 20.00.

QLD:

President — Mr. A. J. Aarsse VK4QA

Secretary — Mr. W. L. Gieles VK4ABG

Broadcasts — 1825, 3590, 7146, 14342, 21175, 28400,

kHz; 2m (Ch. 42, 48): 09.00 EST.

Gen. Mtg. — 3rd Friday.

SA:

President — Mr. I. J. Hunt VK5QX

Secretary — Mr. W. M. Wardrop VK5AWM

Broadcasts — 1820, 3550, 7095, 14175 kHz; 28.5

and 53.1 MHz, 2m (Ch. 8): 09.00

S.A.T.

Gen. Mtg. — 4th Tuesday, 19.30.

WA:

President — Mr. Ross Greenaway VK6DA.

Secretary — Mr. Peter Savage VK6MCP.

Broadcasts — 3560, 7075, 14100, 14175 kHz. 28.47,

53.1 MHz, 2 metres Ch. 2 Perth, Ch.

5 Wagin. Time 0130Z.

Gen. Mtg. — 3rd Tuesday.

TAS:

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Secretary — Mr. B. J. Morgan VK7RR

Broadcasts — 7130 (SSB) kHz with relays on 6 and

2m Ch. 2 (5), Ch. 8 (N), Ch. 3 (NW),

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Vice-Pres. — Barry Burns VK8DI

Secretary — Robert Milliken VK8NRM

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VK2 — 14 Aitchison St., Crows Nest, 2055 (Ph. (02)

43 5795 Tues & Thurs (10.00-14.00h).

P.O. Box 123, St. Leonards, NSW 2065.

VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03)

41 3535 Weekdays 10.00-15.00h).

VK4 — G.P.O. Box 638, Brisbane, 4001.

VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at

West Thaburnon Rd., Thaburnon.

VK6 — G.P.O. Box N1002, Perth, 6001.

VK7 — P.O. Box 1010, Launceston, 7250.

VK8 — (Incl. with VK5), Darwin AR Club, P.O. Box

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Gillies Street, Thornbury, Vic. 3071.

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VK5 — QSL Officer, G.P.O. Box 638, Brisbane, Qld., 4001.

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Howden Road, Fulham, S.A. 5024.

VK7 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O.

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EDITOR'S DESK

Bruce Bathols VK3UV

At the last Federal Convention, AR came under much scrutiny. One of the present problems is the increasing costs of publication. A substantial portion of our annual subscription is set aside for AR production, and as the next year's fees are fixed during the current year, any excess costs outside normal inflationary trends strain the Institute's resources.

To maintain the quality our members have come to expect, the entire production itself is kept constantly under review. Last year, observant readers will have noticed a slight change to the paper quality. This saved the Institute many hundreds of dollars over the year alone.

We are again now hit with the inflationary spiral through wage awards, paper and printing costs, postal increases, etc. You name it, if it can be increased this year, it will be, and of course we the WIA members must pay for these rises if we desire to maintain and improve our existing standard.

Many of you will also have noticed the lesser number of traders advertising in AR. The reasons for this are varied, but can be summarised mainly under the heading of increased costs due to inflation. Advertising is not cheap, but the revenue it brings helps to defray our publication costs. In order to keep our advertisers happy and to gain their continued support, positive feedback is required. Now often do you tell the advertiser that you are buying his goods because you read his advert in AR? Let him know often and loud, that AR was the vehicle which made you purchase his goods offered for sale. If the advertiser does not get this type of feedback, he goes elsewhere, and of course the quality of AR will suffer as a result.

This month sees the start of our efforts to adjust to this increasing spiral. From this issue forward, AR is being printed fully by the Web Offset method, and as we become accustomed to this change-over, some teething problems are to be expected. Please bear with us while we smooth out the rough edges. As a result of the Web Offset printing, subtle changes and improvements will be gradually introduced over the next few months.

Lead times for current materials will be able to be slightly lengthened (but not yet, we shall advise you shortly of the new cut-off dates), a greater use of spot colour will be made, and an increase to the number of printed pages will be possible eventually.

With these changes we also expect to be able to maintain our present standard and to stay within the executive budget for the rest of the year.

Also at the Convention we agreed to include once again "Divisional Notes". There is much other general information contained in each Division's notes which are sent as an insert to a particular Division's members only, but is lost to WIA members as a whole.

Therefore, in the next few months, Divisional inserts as such will be phased out, and instead will form part of a special new section within AR. This will also alleviate some distribution problems previously experienced with inserts. We hope that everybody will be better informed as a result, and we look towards greater unification of our membership without the fragmentation that exists today.

"Amateur Radio" is the only vehicle to achieve this.

Many of you will have noticed the International flavour creeping into some of our articles. Several original articles have been received direct from our subscribers overseas, and it goes to prove that AR has become widely accepted overseas as well as within Australia.

This does put us into a slightly embarrassing situation. At the present time we are slightly overloaded with original articles, and these will be published as soon as we can make the space available. Unfortunately, some extra delays will have to be expected before publication can be made. However, do not let this deter you from submitting your articles as in the past. I think you will agree that a slightly longer delay is worth the wait, when you consider the vast coverage AR gets, and the possibility of being reprinted in the larger international amateur magazine.

A list of original articles accepted for publication will be published shortly to let everyone know what is around the corner.

Authors can help us to clear the backlog and speed up publication in the following ways:

1. Types on one side of the paper only, double spaced preferred — this includes Hamads and letters to the editor.

If no typewriter is available, please print clearly, leaving sufficient space between the lines for editorial corrections, etc.

2. For technical articles requiring drafting, ensure the diagram is laid out clearly, and labelled legibly. Alternatively, if you are capable of drafting yourself to the standard previously published, please do so, allowing for sufficient definition for items which will be reduced photographically.

I know that we have our members' support and we are all going to benefit because of it.

73 for now, and don't forget — SUPPORT OUR ADVERTISERS, AND TELL THEM YOU SAW THEIR ADVERTISEMENT IN AR.

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QSP —

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Paradoxical as it may seem, radio amateurs are in the main very poor communicators. Oxford defines communicate as "the exchange of information", that is to say communication must be a TWO-WAY exchange. Our ability to communicate "on air" therefore is unquestioned.

However, whilst attending Federal Conventions, I have often conceived the impression that the trend of discussion has been influenced through a lack of communication, both Councillors to the membership and the membership to Councillors. In this instance we must all accept various degrees of guilt.

Nonetheless, the situation can be readily rectified, by ensuring that all agenda items for the Convention are received in sufficient time for inclusion in the January or February issues of Amateur Radio. This would then allow all members to analyse the agenda items and where they felt that they can constructively comment, either for or against any item, communicate those views to the Divisional Council or Federal Councillor.

It is imperative that the views of the membership be solicited and injected to Federal Conventions to ensure a more democratic deliberation, on the matters before the Convention. The time to instigate the submission of an agenda item to your Divisional Council is now.

Let us all unite and COMMUNICATE proficiently on the implementation and amendment of policies governing the direction and administration of amateur radio both nationally and internationally.

COLIN HURST VK5HI,
VK5 Federal Councillor.



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Tracking Oscar	B & W	30 mins.
The Apollo 13 Disaster	Colour	1 hr. 20 mins.
The Signal to Noise Story	Colour	45 mins.
Microcomputers	.....	Colour	50 mins.
Microcomputers	.....	Colour	10 mins.
Winning Foxhunts	Colour	45 mins.
Auxilliary Battery Charging	Colour	30 mins.
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WIA NEWS

A meeting of the Joint P. and T./WIA Committee was held on 21st May. A great many subjects were discussed but few could reach finality.

The new Handbook is now available. Another sample paper of 50 AOCIP questions will be issued by the Department soon. The WIA asked what in the Handbook should not be subjects for examinations — one example constantly quoted is Repeater conditions (paragraph 5.11). A list was promised for early June.

Copies of the Handbook can also be obtained from your Division or from Magpups — see advert.

As stated before, the Handbook interprets the Regulations and does not modify or over-rule them. If the Regulations change so also the Handbook must be changed. The new WT Act still appears as far away as it ever was.

Stating your equipment, or intended equipment, is no longer a requirement on the licence application.

The Department is still examining the request by the WIA to reserve WIA to WIZ call sign suffix blocks. The Department is issuing special out of series suffixes as RAN and SAA. Special prefix requested for 1988.

The Department felt a need to re-examine the theory syllabuses not only to spell out some subjects in greater depth but also to include some items not previously dealt with (e.g. simple treatment of ICs). A joint review is scheduled to early June.

Procedure when amateurs possess equipment capable of power output greater than permitted was also raised by the Department but WIA drew an analogy to motor vehicles and speed limits. It must be obvious that if amateurs possess such equipment it must be operated in accordance with the Handbook or they must expect special attention from Departmental officers and others, together with running the risk of causing interference, etc.

At a meeting of the Executive on the following day much time was occupied with various organisational affairs, including the appointment of the various Federal Chairmen of Committees or other officers (virtually unchanged) and secretarial or office arrangements and procedures. A copy of the new ARRL amateur radio film, "World of Amateur Radio", has been obtained and Divisions can now obtain videocassettes of this from the Federal Videotape Co-Ordinator.

A submission is to be prepared for the P. and T. Department's "Review of Citizens' Band Radio Service Policy" on matters likely to affect the amateur service. This submission is expected to include a re-statement of WIA policies adopted over several years. See Amateur Radio, October 1974, page 8; January 1977, page 4; February 1977, page 4; June 1977, page 5. These policies are as fresh today as when they were adopted.

1980 CALL BOOK

This edition is now being finalised. There are a great number of changes and additions since the 1979 edition. Supplies should become available next month or early in September. If you want any changes to your call sign, address, etc., it might be possible to include them in the new Call Book even at this late date.

QSP

MONEY ORDERS — SUBS (ETC.) PAYMENTS

Did you know it costs you 60 cents to buy a money order for \$2 amount and over? It costs us another 50 cents if we have to cash it through a bank account. Postal notes have of course been discontinued.

Bankers will issue bank cheques for less than it costs you to buy a money order. If you send money this way have the cheque made out to "WIA" or "WIA Division", whichever is appropriate. Although it is cheaper to pay in hard cash it is better not to send cash through the post.

TV Rx INTERFERENCE

"For many amateurs the interference radiated from nearby colour television receivers continues to represent a considerable handicap to weak-signal operation. The prospect of a further, significantly more powerful, source of interference from millions of consumer equipments is thus something of which we should take careful note (microwave ovens is one current item of concern) and, if possible, join with other sufferers in trying to persuade manufacturers and authorities to mitigate the worst effects." — TT In Radio Communications February 1980.

DIXIE NET

VK amateurs are invited to join the "Heart of Dixie Net" on 2827 KHz at 0100Z on Fridays and at 1900Z on Wednesdays. The latter net of 1900Z is controlled by WD4ENZ, XYL of WD4ENY, who controls the net at 0100Z.

1980 SEANET CONVENTION

This year is the 10th Seanet Convention to be held in Manila 28th to 30th November, 1980. How about fitting this into your holiday cruise programme? For details write to DU1JJT, C/- PARA, Box 4083, Manila 2801, Rep. of Philippines.

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A change of printer has been finalised and thanks must go to our previous printers for their work on the magazine since July 1975. As the change made in April 1973 from letterpress to sheet offset was dictated to some degree by increasing costs so the change now from sheet to web offset is primarily for financial reasons.

The Executive wishes to acknowledge with grateful thanks the following donations to the WARC 79 fund received via the VK5 Division:—

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Amateur Radio for the Cruising Yachtsman

By Eddie Rooms VK4AER-MM
C/- Yacht "Assegai"

INTRODUCTION

This article is in two sections —

The first section deals with the author's description and his findings whilst cruising aboard his yacht "Assegai", together with some installation procedures of amateur equipment in sailing vessels.

It makes very interesting reading and is geared more towards the boating enthusiast.

Amateurs will no doubt skip over the basic amateur radio terms quoted, but nevertheless makes us realise how little the general public knows about our hobby.

The first section only will be published in "Modern Boating" magazine in the near future, and the copyright is held by Modern Magazines, 15 Boundary Road, Rushcutters Bay, NSW 2011. Our thanks to Modern Magazines for allowing us to publish the article exclusively in "Amateur Radio".

The second section will be published next month, and gives the author's personal comments on how the WIA may improve its service to amateurs, and increase general interest in amateur radio.

We suggest readers give serious thought to these comments, and let your Division know what you think. (Letters to the Editor are always welcome, too.)

The possibilities here are boundless, but it requires the personal backing of the Australian radio amateur.

Here now is part one. I hope you obtain some benefit from the article.

(— VK3UV, Managing Editor.)

PART 1

The tremendous advantages of amateur radio as a communication media for cruising yachtsmen are not well known to Australian sailors. The following information will be of great interest to anyone contemplating foreign cruising, especially if they are thinking of fitting radio equipment, but are deterred by the high cost of marine single sideband equipment and the limitations of marine VHF.

"Assegai" has now done over 25,000 miles cruising throughout the South Pacific and the Australian coast. We have visited New Zealand, Austral Islands, Tahiti, Tuomotus, Marqueses, Suvarov, American Samoa, Tonga, Fiji and the New Hebrides over a four year period.

We left Australia with normal, type-approved marine radio as used in racing yachts in Australia. Now, like scores of other cruising yachtsmen, we realise the tremendous advantage of having amateur radio equipment aboard. Most foreign yachts that have radio, have SSB high frequency amateur transceivers of the type used by radio amateurs all over the world. They use it to keep in touch with friends ashore and afloat, contact a doctor, get parts to remote areas in an emergency, report their positions while on telephone calls* to home, obtain weather reports and any information required other than business or commercial traffic.

* Uses of course depend on nationality of licence and extent of third party privilege, if any.

Amateur radio can handle emergency traffic for yachts and radio amateurs are organised to do just that.

There are countless examples of it saving lives at sea but they all have one thing in common. With this type of equipment, the yachtsman can communicate not only with radio amateurs but also with emergency services such as the US Coastguard, military vessels and aircraft and commercial ships. The Australian yachtie may ask what point there is in being able to contact the US Coastguard if, for example, he is near Fiji. To state the obvious, the US Coastguard have telex and will raise Nadi search and rescue for him.

It is difficult for those without amateur radio on their yachts or experience of it to realise that it gives the yachtsman world-wide communication, and contacts all over the Pacific from Australia to the US or anywhere in between can be expected night or day.

In 1976 the C&C 61, "Sorcery" was rolled and dismantled in the North Pacific. It was a Mayday situation involving injured crew. A 200 watt Atlas amateur transceiver had been installed and with a 20 foot wire strung along the deck, the operator was able to contact a ham operator in Alaska, several hundreds of miles away. The 14 MHz band was used. Amateurs in Hawaii and Seattle joined in the frequency along with the US Coastguard. A nearby Danish freighter overheard and altered course to join the "Sorcery" until a Coastguard cutter arrived to take her in tow. Incidentally, the amateur aboard "Sorcery" was a woman and the Alaskan ham contacted her hus-

band in California by direct phone patch. By this means, she was able to speak direct to home from the stricken yacht.

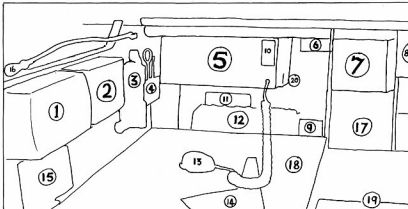
At Eiao, an uninhabited island in the Marqueses, French Polynesia, a seriously injured man was rescued from a ravine in rugged country thanks to amateur radio.

One of the three yachts there at the time had amateur radio and the skipper, Steve WB6MMW, contacted Alaska and the Pacific Maritime Mobile Yacht Net. The net relayed the emergency situation and information to Nuku Hiva, the nearest main centre to the accident. We took the medical team the 80 miles on "Assegai".

A 36 foot yacht "Aburab" from the US had a medical emergency while it was in the eastern Pacific near the Central Americas. One of the crew was suffering from appendicitis, so the owner, an amateur, contacted an amateur club station in Panama. A C130 aircraft with a surgeon and two paramedics located the yacht using the amateur frequencies. The co-pilot was an amateur operator. The critically ill crewman was successfully treated aboard the yacht.

On the international amateur bands there is always someone listening somewhere. Because of the wide range of frequencies and the fact that these frequencies are shared by amateurs world-wide, a cruising yacht can go anywhere, even to the South Pole, and still keep in contact with other yachts and shore stations.

In fact, "Solo" recently did so on her trip to Antarctica. For most of the trip she was out of range of the marine fre-



Key to Photo No. 1 (Cover Photo) and No. 2: Navigation and Radio Area on a Cruising Yacht.

1. Brookes and Gatehouse "Harrier-Hermes" electronic ship's log and speedometer shows speed and distance in knots and nautical miles.
2. Brookes and Gatehouse "Homer Heron" Model C radio direction finder receiver. A superheterodyne receiver designed principally for long wave RDF aeronautical and marine non-directional beacons. Also receives broadcast band and 2-4 MHz marine band. Operates from ship's aerial or from (3).
3. Hand bearing compass integral with tuned ferrite rod antenna for ascertaining position lines by finding the "null" point of a non-directional beacon. With an experienced operator position lines accurate to 2° can be achieved.
4. Pencil rack, dividers, etc.
5. Atlas model 350XL DR Mk. II HF SSB transceiver. Covers all bands 160-10 metres inclusive and operates on 12-14V DC ship's batteries. 350 watt PEP input transmitter section with four CD-2545 output transistors and all solid state circuitry. Single conversion

receiver with 5595 kHz IF and double balanced diode ring mixer. Operates CW 500 kHz wide) or USB or LSB. Has digital readout and analogue readout.

6. Asahi twin meter, SWR and PWR.
7. (See photo No. 2.) Unique Transmatch antenna tuner. Provides continuously variable LC combination as well as a T network for coax fed antennas. Will match long wires or coax antennas to any frequency 1.7 MHz-30.00 MHz. Can handle 1500 watts output power. It makes use of a 600 pF air variable capacitor, three 68 pF ceramic capacitors (selectable by jumper bars at the rear) and a continuously variable 0-28 micro-Henries roller inductor. Four networks are available and SWR when feeding the backstay aerial is always 1:1.
8. (See photo No. 2.) Barker and Williamson model 590G coaxial change-over switch selects either of two feed points on base loading coil of backstay or Scalar SC HF whip system. Dipole can be plugged in to spare outlet for in-port operation. Backstay

aerial is a 5/8 wave vertical on 20 metres and gives very low angle of radiation and about 3.5 dB gain over a half wave dipole. Radiating section is 41 feet long approximately and its top is about 43 feet above the water. A base loading coil of 16 turns of 3/8 in. copper tube is fed for resonance on 80 metres, but its greatest efficiency is on 20. Coil is 4 in. in diameter and grounded for the ship's ground plane and the sea. Although technically it should not the vertical works well on 15m when feeding the 80m tap thanks to the tuner.

9. Stowage for British Post Office style brass CW key. In times of bad QRN CW could save the ship and her crew so some practice is always worth it for a maritime mobile amateur.
10. Auxiliary VFO on Atlas 350XL allows duplex operation.
11. Field strength meter for antenna tuning tests.
12. Pilot books and other navigation publications.
13. Shure 404C hand-held microphone.
14. Brooker and Gatehouse "Hurst" plotter for laying off courses and bearings on chart.
15. Brooker and Gatehouse short wave converter for Homer/Heron receiver allows 2.5, 5, 10 and 15 MHz crystal locked reception of WWV and WWVH. The Atlas 350XL also covers 5, 10 and 15 MHz WWV, making two fine signal receivers for celestial navigation purposes.
16. Flexible chart light.
17. Navigation books.
18. Chart table lid hinges up. Chart stowage bin underneath.
19. Navigation seat is actually head of his quarter berth.
20. Mounting cradle for Atlas 350XL allows quick removal of transceiver from boat and has power supply, antenna, mike and external speaker connections.

quencies and used amateur radio for communication with Melbourne, Mawson and even the pilot of a Qantas 747 with friends and relations aboard.

TYPES OF AMATEUR RADIO EQUIPMENT

There are two main kinds of commercially made amateur radio equipment. These are high frequency single sideband transceivers for the amateur bands from 1.8 MHz to 30 MHz and VHF equipment covering amateur frequencies above 30 MHz. Like marine VHF, the latter provides line of sight propagation over 50 to 75 miles. However, automatic repeater stations located at high points along the coast receive a signal on the VHF 2 metre band, amplify it and re-transmit it. Thus with low powered amateur VHF equipment and a short 19 inch masthead antenna, contacts can be maintained while coastal cruising.

However, the high frequency amateur transceiver is the best choice for an off-shore yacht. These sets are capable of communication from 0-25,000 miles, or from Australia to England. A workable antenna can be the boat's backstay or a suitable whip aerial. The higher the frequency the easier it is to install a resonant antenna. This is one of the big difficulties in using 2182 kHz 2524 and 2284 aboard small vessels.

FREQUENCY COVERAGE OF HF AMATEUR TRANSCEIVERS

These sets have variable frequency oscillators (VFO) and are not crystal locked like marine SSB. The VFO allows the operator to move up and down any 500 kHz segment of the various amateur bands.

The most useful bands for the long distance and coastal cruising yacht are 80,

40, 20 and 15 metres. The operator simply selects the frequency suited to the distance required.

A big advantage of amateur radio for the foreign going yacht is that these bands are shared internationally and the problem of fitting and tuning appropriate frequencies on a world or Pacific cruise never arises.

PROPAGATION, RANGE AND COMMUNICATION CAPABILITY

With marine SSB the yachtman is restricted to fixed 2 MHz, 4 MHz, 6 and 8 MHz crystal locked channels. On these, casual conversation is prohibited. This is all right for purely coastal cruising work and for working OTC coast stations and weather services. There are limitations to this, as for example, if you are between Suvarov and Bora Bora, you will be very

lucky to be heard on 2182 or 6215.5 kHz. There are no radio relay vessels around those parts. Foreign countries don't share most of the Australian small ships frequencies and very few cruising yachts have them.

In a yacht race around Tetiaroa atoll in French Polynesia, we were asked by the organisers to report any sightings which were unusual as a local yacht was reported missing. On seeing a red flare, "Assegai" and "Tentation", the only yachts with marine radio, reported to Mahina Radio, Tahiti, on 2182 and their 8 MHz working frequency. There was no answer and we were assured on good authority that the listening watch is only sometimes kept. This situation is not uncommon in other parts of the Pacific. If you are going cruising don't expect the kind of outstanding service that the OTC or Auckland Radio provides for small ships.

With Amateur HF SSB, as already stated, you can have world-wide communication capability from aboard a cruising yacht. Sophisticated antenna systems such as yagi beams are not necessary and an efficient aerial can be worked into the boat's rigging.

Due to their ability to make best use of ionospheric skip, amateur radios make CB radios seem like mere toys. High power allows great flexibility in antenna systems and HF amateur sets have many times the range of marine SSB. One simply selects the band suited to the distance required. In practice, most yachts use 20 metres for long range and either 40 or 80 for closer range. A 20 metre signal from Melbourne would bounce right over Sydney, but be clearly heard in Tahiti or Los Angeles. Communication between Tahiti and Vancouver, mid-Tasman and Fiji or Auckland, Japan and Sydney, England and New Zealand, Cairns and Melbourne, Hawaii and Bass Strait, Bass Strait and Melbourne, Melbourne and Geelong, etc., etc., can be expected with reasonable reliability with only an elementary knowledge of propagation. The amateur bands are international which means one can communicate with other yachts or amateurs from other countries. Distance is irrelevant.

About 70 per cent of US yachts and 30 per cent of Canadian yachts have amateur radio equipment aboard. There are very few New Zealand and Australian yachts with it but the number is certainly increasing. When properly set up it is definitely the most reliable form of communication for the foreign going yacht. An ocean racer with it aboard has a better communication capability than the radio relay vessel. "Solo" took a 200 watt Atlas to the Antarctic, "Kiadoa" has an Atlas 350 XL. A Costa Rica yachtsman who sailed a "470" from the Galapagos to the Marqueses also had an Atlas.

Most of our friends on cruising yachts have either Yaesu or Atlas equipment. "Assegai" has an Atlas.

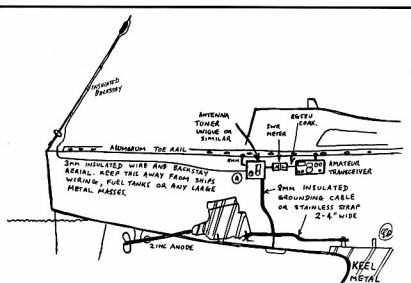


FIG. 1: LONG WIRE BACKSTAY ANTENNA — THE SIMPLEST INSTALLATION FOR MULTIBAND OPERATION

Total length of antenna can be any length if a good tuner is used. The Unique is recommended since it will match ANY frequency 2-30 MHz to a long wire. Wire from the tuner should be as straight as possible without any kinks, twists or sharp bends. This antenna set-up is unsuitable for a steel boat. Transceiver and tuner chassis must be grounded.

Tune long wire for lowest SWR and highest forward power on meter.

INSULATED BACKSTAY: Use AYF approved swaged insulators. Section between insulators to be as long as possible. Bottom end of antenna (Point A) connects to "single wire" terminal of tuner. From "A" to top insulator if close to 66 feet (a full wave length on 20 metres) will match well on all bands with a good tuner.

BRANDS AND PRICES — HF, SSB AMATEUR RADIOS

It is best to use a brand which provides output in the better than 100 watt PEP range. The most popular brands on cruising yachts are Atlas 210 X, 215 X and Atlas 350 XL, Yeasu FT 101E and FT 101B, the Kenwood TS 520. All of these can be operated from a 12 volt battery. There are dozens of other brands such as Swan, Drake and Heathkit. Prices vary, but a general rule is that amateur gear is about half the price of marine SSB for the same output. For around \$900 one can have a 100 watt PEP output set covering the amateur bands. An antenna tuner is most desirable in order to match the backstay or other aerial to the wide range of frequencies as is an SWR bridge in order to monitor antenna match. Tuners vary in price from about \$100 to \$400 and an SWR bridge costs about \$30.

Contrary to what many yachters think one need not be an electronics wizard to operate a set and many brands are designed to be "idiot proof", particularly the Atlas and Drake. The market for amateur equipment is very large and world wide. It is very competitive and a good brand is very reliable. It is quite common for a manufacturer to sell many thousands of one model.

The all solid state types are best for maritime mobile amateur use as they are

physically smaller and do not have valves, thus being less susceptible to vibration damage. The use of transistors instead of valves in the final output stages of a set does away with the need for heating elements which demand more battery power before the set can go into transmit mode.

NET OPERATION

A valuable service to the yachtsman cum amateur radio operator is the use of "nets" by increasingly large numbers of both land based and maritime mobile ham operators.

What then is a net? A net is comprised of a group of amateurs who meet at a specific time (either daily, weekly or whatever) and a specific frequency in order to share a common interest, pass on traffic or contact other amateurs. Nets are run by a net controller who is always strictly voluntary and who is usually assisted by various relay stations. The members check in with the controller to let him know they are listening either to help out with information or look for a friend should he come up on frequency. Should any two stations or group wish to have a more private QSO they simply move off the net frequency, for example up or down 10 or 15 kHz and carry on their QSO without holding up the net traffic on its pre-arranged frequency. In a well run net very large volumes of traffic can be

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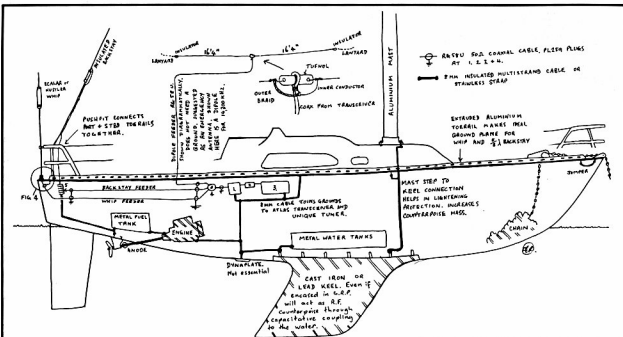


FIG. 2: ANTENNA AND GROUND SYSTEM ON "ASSEGAI"

LEGEND:

1. Antenna tuner. Unique recommended as it has continuously variable inductance/capacitance capability.
2. SWR and power meter in RG58U coax line, e.g. Asahi MF-11X or Toyometer YM-1E.
3. Amateur Transceiver. At least 100W PEP output recommended. All solid state preferable. 12-14V DC.
4. Coaxial changeover switch selects antenna.
5. Copper loading coil for base loaded backstay. Coil is fed for resonance at desired frequency. Backstay length from 5. to top is critical (see Ham Books).

(DC Cables omitted for clarity)

The net is now run by a New Zealander named Noel ZL1CU in Auckland. He carries on the work of recording yachts' passages and arrivals, emergencies are relayed directly to the relevant authorities and are also broadcast to all persons who could help. Medical traffic is given priority as is Mayday traffic. The American Amateur Radio Medical Service can be brought on frequency at any time by phone in Hawaii. This means the doctor himself speaks to the patient at sea. The US Coastguard has a frequency in the same amateur band and its helicopters worked in conjunction with "hams" in the "Sorcery" incident in the North Pacific. The net has communications capability extending well beyond the range of coast radio small ships service, which was never designed for international cover. If Australian Coastal Surveillance, Canberra, wants to find a yacht in the Pacific or Indian Ocean, it asks Noel in Auckland to put over a bulletin on its behalf.

There are other nets. Some are big and more formal like the Pacific Maritime Mobile Net, while others are small, informal and more localised, comprising of only a few friends in the Fiji area for example.

Examples are: Atlantic Maritime Mobile Service Net, Jerry's Net for Canadian yachts and friends in the Pacific area. "The 40 Metre Net" covers mainly French Polynesia, "Earl's Net" mainly for US yachts out of Southern California. The 15 metre net is another. There are all maritime mobile nets. There are many, many others designed for land stations, such as the Pacific Inter-Island Net, which is large and handles traffic for Americans and others in Pacific Island territories.

handed. The most useful net for the cruising yachtsman in the Pacific Ocean, China Sea and Indian Ocean is the Pacific Maritime Mobile Yacht Net. It was founded by an amateur named Robbie YJ8AN. Robbie would be there every day, 365 days a year, at 0530 GMT, 14315 kHz \pm QRM. This was in 1973, and because of the tremendous range of his signal from the New Hebrides, distance was irrelevant, thus enabling Robbie to receive and reply to yachts checking in from thousands of miles away. These included yachts from Tahiti, Hawaii, Vancouver, California, the Caribbean, Guam, Pago Pago, Cairns, Bay of Islands, New Zealand, Fatu Hiva, Pitcairn, Manihiki Atoll, Yasawas, Isle of Pines, Antarctica, Timor, Okinawa, Kodiak and on passage all over the map. Robbie was nicknamed "Mickey Mouse" after MM for Maritime Mobile, the official term for an amateur station operating outside territorial waters.

Scores of people tuned in to listen and work this most interesting guy, who could pass an extraordinary amount of traffic in the hour or two after 0530 GMT. The Mickey Mouse Net was later run by Ted

VK4AEM, from Caloundra, Queensland. Ted ran the net efficiently and like all radio amateurs kept a log. Furthermore, he plotted the positions of boats making passages on a large blackboard after they had checked in. About the only time he became annoyed was when yachts which had checked in while on passage failed to notify him on arrival at their destinations. Yachts which checked in on a regular basis and failed to do so over several days were "called" by Ted to ensure all was well on board. He also arranged schedules between yachts, noted when particular yachts would be up on frequency again and many other details, such as an alert for a stolen yacht. US Coastguard and Marine Operations Centre, Canberra, have contact with this net.

The Maritime Mobile Net over the years has involved more and more yachts, and amateur radio operators who are primarily concerned with the welfare of "yachties", who have been and are able to check in on the 20 metre band. Emergency, priority and medical traffic are all handled at the beginning of the "net" when the frequency is left open for a reasonable amount of time.



PHOTO 2 (left): SWR Bridge, unique transmatch antenna tuner and antennae selection switch. Atlas 350XL is to the left — see key diagram.

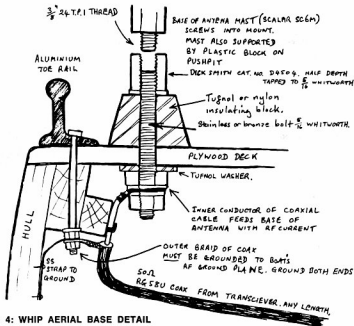


FIG. 4: WHIP AERIAL BASE DETAIL

NOTE: It is very important that a whip has a good ground plane from which the RF signal will be reflected into the ionosphere (see Fig. 3). The aluminium toe rail, life lines, pushpit and pulpit, when connected to the water, are perfect. Keep the whip low and close to the water.

MAYDAY TRAFFIC

I should point out here that it is not necessary to wait until a net time if you have an emergency situation. With amateur radio equipment aboard which is properly set up, the yachtsman can expect to contact someone, somewhere. There are always thousands of amateurs listening all over the world. Remember that if someone is talking, there will be someone listening. Call as soon as he stops talking or before he does and either he or his contact will hear you. Amateurs are obliged by law to

handle Mayday and Pan traffic. Loss of the licence would be the result of ignoring this law. Amateurs can be found in your own home town. They are on islands, on yachts, in private and commercial aircraft (The DC10 has a 14 MHz amateur frequency), commercial ships, military bases, Scout camps, technical schools, US Coast-guard stations and vessels. There are 20,000 amateurs in California alone and nearly 13,000 in Australia.

WHAT IS A PHONE PATCH?

Amateurs in certain countries, notably

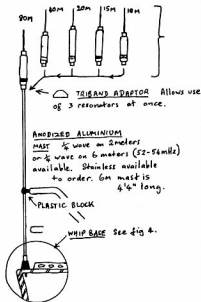


FIG. 3: MULTIBAND WHIP SYSTEM
RESONATORS with adjustable tips. One for each band screws to top of mast. Marine band resonators are available to order. An SWR bridge has to be used to adjust the tip to resonance in order to gain maximum effective radiated energy. High SWR will result in very low power transfer to the whip (see table four). Resonators are colour-coded and cover the whole band to which they apply. They are small and easily removed for stowage.

NB.: It is essential that the base of the whip be close to a good ground plane such as toe rails, life lines and pushpit. They should be grounded to the sea. Keep the whip low as at HF a large proportion of the signal is bounced into the ionosphere from the ocean's surface.

USA and Canada, but not Australia, UK and New Zealand, have a device called phone patch. This enables them to relay telephone traffic through their amateur radio equipment. An example will show how it works. A yacht's skipper with a VE7 call spoke from his yacht which at the time was near the island of Raiivavae in French Polynesia, to his wife in Toronto on the telephone via a VE7 ham in West Vancouver. They arranged to meet in several days at Tubuai airport, also in French Polynesia, but 100 miles from the yacht. The skipper had regular skeds with the Vancouver amateur, who simply made a collect call to Toronto while he was on frequency. Note that French Polynesia no longer allows phone patch traffic from

yachts within 70 miles of any of its islands but patches from a high seas location are legal. The Canadian and Americans make many similar situations possible and international third party traffic is legal for them. Australian amateurs would lose their licences if they did the same thing, and an American would be in trouble if he passed third party traffic for an Australian amateur. It is in order, however, for an amateur aboard a yacht to speak with mutual friends in another amateur's radio room. It is also quite legal for a yachtie to keep skeds with a land based amateur. There are many amateurs in NSW, Victoria and Queensland who keep private skeds with Australian yachts while the vessels are on passage or just relaxing at anchor.

INSTALLATION

All too often, radios are not well set up on boats, despite the fact that owner installation is an easy matter when a few basic principals are followed. Three things need to be considered:

1. Location of the transceiver and its power supply.
2. The antenna system.
3. The ground system.

If a vessel is properly designed, there will be a dry place away from salt spray and possible surging bilge waters in which to install the radio. This is usually at the chart table which is a handy position for the operator. It may also be beside a settee berth in the main cabin. "Assegai's" radio is located at the chart table and we have plastic screens which roll down over the radio and antenna tuner in case of water finding its way over the spray dodger which covers the main hatch.

It is very important that the heat sink fins on the solid state equipment are in a well ventilated position to enable proper cooling of the output transistors. The power cable running to the batteries should be as short as circumstances will allow in order to minimize voltage drop. The cables should be double insulated 2.5 mm to 3.5 mm multi-strand and they should go direct to the battery with a fuse or circuit breaker in the battery end of the run.

THE AMATEUR LICENCE AND HOW TO GET ONE

As is the case with all radio equipment, one requires a licence to operate an amateur transceiver. Full details of requirements are available from the Radio Frequency Management branch of the Posts and Telecommunications Department in capital cities or also from any radio inspector's office in provincial centres. A great deal of material such as past exam papers is free for the asking. The Department conducts exams every six months in major centres. Most radio inspectors are very helpful and will advise you as to the best study courses in your area, run either by the local technical school or radio club. Correspondence courses are available from the Education Service of the NSW Branch of the Wireless Institute of Australia at PO Box 123, St. Leonards 2055, NSW.

The WIA also sells excellent morse code instruction cassette tapes for only \$3 each. It has offices in all States and welcomes enquiries from people interested in amateur radio. It is the official arm of Australian radio amateurs and represents them not only at a Federal but also on a world level. Morse code practice is broadcast by its stations VK2BWI and VK5WI

in the 80 metre band on 3550 kHz between 7.30 p.m. and 9.30 p.m. every night of the week.

There are three levels of licence.

AACP — Amateur Operators' Certificate of Proficiency.

AOLCP — Limited Amateur Operator's Certificate of Proficiency.

NAOCP — Novice Amateur Operator's Certificate of Proficiency.

AACP or NAOCP are the best certificates for the cruising yachtsman. The AACP or "full call" allows use of all amateur bands, whereas the novice is allowed on 80, 15 and 10 metres, which gives him access to international as well as Australia-wide communication. Morse for novice is only 5 w.p.m. send and receive, which is easy. The full call requires 10 w.p.m. morse and needs much more practice. Both novice and full call require passes at the same regulations exam, but the theory for the full is more involved. Many fully licensed amateurs have had no previous electronics background.

Novice frequencies are 3525-3575 kHz (80 metres), 21125-21200 kHz (15 metres), 28100-28600 kHz (10 metres).

The limited exam is the same as AACP full call but without any morse code requirement. The holder is restricted to frequencies above 52 MHz and therefore denied use of HF SSB transceivers which are so valuable to the cruising yacht. Section 92 and 93 of the Handbook for Operators of Radio Stations in the Amateur Services make it clear that an amateur station is legal aboard Australian vessels. It is the operator not the vessel which is licensed and he may bring his equipment aboard. The owner of the yacht need not be the operator and the station is legal in foreign territorial waters or on the high seas. A station in this situation is maritime mobile and would have a call sign as follows — VK4AER/MM. The VK refers to Australia, the 4 is the State of Queensland, the operator's normal home State, AER is the amateur's call letters, while the MM refers to maritime mobile.

Many Pacific Island countries will issue call signs for a small fee to foreign yachts, but these calls are to be used only while the operator is in the territorial waters of the countries concerned. They are not valid for other areas. It is advisable to have a call sign and licence before going cruising.

I hope that this gives you some idea of what amateur radio means to the cruising yachtsman. I'll say 73 at this point and catch the Pacific Net as it is nearly 0530 Zulu and an old friend Ian WA6DNV, who is maritime mobile and approaching Chile, will be checking in with Noel ZL1CU in Auckland. It will be interesting to see how Ian's current cruise is going.

Good luck and good sailing.

END PART ONE.

Part 2 continues next month. ■

TABLE 1

Some Amateur Maritime Mobile Nets

Net	Time GMT	Net Control	Frequency kHz	Coverage
Pacific Maritime Mobile Net	0530 daily	ZL1CU Auckland	14,313	Total Pacific area via relays
DDD Net (Doers, Duffers & Dreamers)	0400 daily	VE7CEM Vancouver	14,116	Eastern and Central Pacific
The "15 Metre Net"	2300 wk. days only	Various	21,404	Pacific area
*Pacific Inter-island Net	0800 daily	Usually a Guam station	14,313	Pacific area, especially U.S. possessions
UK Maritime Service Net	A new net. Time as yet unknown to writer but control is UK station		14,313	Atlantic area for cruising out of UK and Europe

*The net for handling traffic and contacts between many Pacific Islands and mainland USA, but US yachts often use it for phone patch traffic and contacts with home. Other Maritime Mobile are welcome.

There are many other nets which will also handle maritime mobile check-ins. Examples are the South East Asia net, the Seafarers Net, Tony's Net, the Coral Coast Net, the 40 Metre Net.

A Decade in Review

The Expanding World on VHF in the 70s (Part 2)

This month we present Part 2 of an article by our VHF/UHF Sub-Editor, Eric Jamieson VK5LP. The last few years have brought excellent conditions to the VHF/UHF orientated amateur and readers will recall some of the highlights presented with a wish that such good conditions prevail in the future.

JANUARY 1976

The Mt. Gambier 144.65 beacon under construction. (What happened to it?)

EME: VK2AMW to K8UQA on 432 on 27-10. During WA6LET tests on 432 VK5NC, VK5MC, VK5QR and VK3ZUR copying signals.

VK3ZAZ trying skeds to C21 around 1900Z — MS to equatorial regions?

A ZL trying to get vertical polarization on 2 metres standard for all modes!

AMSAT report that rare stations like 4W1ED, ZB2BL, TU2EF and FY7AS being worked via Oscar 6 and 7 in Europe.

FEBRUARY 1976

Report on northern VK4 2m activity.

VK4UX reports JAs for the first time this cycle on 10-17-75.

VK4UI worked C21KM/MM via Gold Coast repeater (C21KM 250 km out to sea!).

VK3ZAZ says to turn your power down with strong signals around. Quote, "It is proven that long haul DX only appears October-November and March-April, with slight exceptions".

2 metre SSB really active with those IC202s getting into the act.

MARCH 1976

VK8GF has 2 metre SSB.

Large tropo openings between VK3, 5 and 6 during December and January.

VK5PB and VK6XY set world RTTY record on 144.08 on 1-1-76, distance 1,170 miles.

VK5ZK worked VK6XY on a Ken handheld on Ch. 40 same date.

VK4ZRF 5 x 9 on 6 metres with his 20 mW. Very little AM on 6 in 75-76 season.

APRIL 1976

Mt. William goes to Ch. 7.

EME: VK2AMW contacts W1SL, K0TLM, W0YZS and JA1VDV on 432 during January 1976.

During December 1975 contacts to W9GAB and K2UYH. On 144 EME VK5MC worked WA7BJU and W4WNH/8 February.

Suggested 70 cm band plan to remove EME QRM troubles.

Also a 144 MHz band plan — seems the explosion of IC202s has really given SSB a lift.

Proposed beacon plan from VK3AQR.

MAY 1976

More overseas beacons appearing in the listing. Brisbane VHF Group have a beacon

on 432.4 running 10 watts to three half-wave dipoles.

VK4UX reports more JA contacts during March 1976.

Increased numbers of IC202s, some backed up with 6/40 linears.

JUNE 1976

Details of Malaysian VHF allocations.

JA activity to VK4 good during April with all afternoon openings.

Five Rockhampton stations with 2 metre capability.

EME: VK2AMW to JA1VDV, 9FT and hearing VE7BBG, I5MSH, VE4JX, SM5LE and ZE5JJ in March! VK5MC worked W6PO and WA2BIT on 144 EME. A list of 13 stations worked on 144 MHz EME by VK5MC with following statistics: 7 using 8877s, 5 using two 4CX250Bs and 1 using 3CX1000A! Almost all using U310s as preamps as well.

JULY 1976

VK7 432 beacon receives approval to operate 432.475 MHz.

VK5SU leaving Ceduna for Moree, NSW.

WA6LET signals heard by many during May EME tests.

No JAs into Brisbane during last equinox.

AUGUST 1976

More on VK7 432 beacon: using bi-directional antenna and 20 watts output.

VK4RO, VK4JH and VK4MS have 432 gear.

VS6BE and KG6JDX being worked from Japan.

JA1VOK looking for 144 MHz TEP contacts to VK.

WA6LET worked W3CCX, WB7BST, VK3ATN, JA9BOH and W9WCD on 2-6 via EME.

SEPTEMBER 1976

Mid-winter Es between VK4, 5 and 7 on 12-6 on 6 metres.

Gold Coast have operational UHF repeater on 433.225/438.225.

Possibility of Chatham Is. being active on 6 metres, population 600 people, 50 chickens, 4 dogs and 2 amateurs!

VK2AMW to W1JAA (ex W6FZJ) on 5-6 via EME. W3CCX going portable EME to Columbia, South America, on 432 MHz.

OCTOBER 1976

VK6ZDY and SMIRK reported Northern Hemisphere DX looks interesting.

VK2ZAY lists some 14 stations worked during winter Es.

VK5SU/2 (now VK2BXT) had his first 6 metre contact from Moree to VK7ZGI on 6-7-76 using 40 metre dipole! VK2YDY active from Moree on 2 metre SSB.

ZLMB reports 6 metres poor out of Dunedin last season with only one contact to Hobart.

Advice offered to keep ears on 50 MHz more often.

NOVEMBER 1976

The beginning of a lot of historical contacts, VK6WG to VK6KZ/P crossband 1296.8 to 146.0 over 10 km on 6-9-76. VK6WG used 3CX100A tripler to 36 inch dish, mode AM. VK6KZ/P using 12 inch electric radiator reflector and diode mixer converter to Barlow Wadley!

Report on VK7ZYT 144 MHz linear using popular combination of 2N5590 driving two 2N5591 to give 50-60 watts.

DECEMBER 1976

JA arrives to VK3 and VK7 on 23-10 with VK3BIZ working 14, VK3AKK 11, VK7JV 9, VK3AMK, VK3ZRY, VK3ZSJ, VK7JG, VK7ZAH each 5, etc. VK3BIZ reports working RA0CCB crossband to 6 metres.

Report that ZL1VHF beacon on 145.1 copied by K6QJS/KH6.

KG6JDX running beacon on 52.050 from 0900 to 1000Z beamed on Australia.

VK2AMW via EME worked LX1DB on 26-9, KBIII on 27-7-76.

JANUARY 1977

Six metres off and running again. YJ8KM most popular, first contact to VK4ZSH on 1-11-76 and to VK1, 2, 3, 4, 5 and 7 during November. All ZL areas being worked in VK1, 2, 3, 4, 5 and 7 and occasional VK6.

Both VK4ZCL and VK4ZKL report hearing French language telephone conversations on 144.360 MHz, possibly from New Caledonia.

P29MJ now VK7MC. VK3AKC complains of lack of VK5, Adelaide station, on 2m. Sixteen VK1 stations now on 2m SSB.

VK8ZCU hearing VS6, KH6, UA, ZL, JA, JR6, HL9, P29 and VK from Darwin!

EME report and some interesting observations at time of total eclipse 23-10-76.

FEBRUARY 1977

2 metre Es to four States, 16-12-76 VK4 to VK5, with VK4ZQR and VK4ZNC to VK5KK, VK5GL, VK5ZBU and VK5ZRK.

6 metres and YJ8KM to Perth on 1-12-76 with good signals.

2 metre Es on 11-12 from VK4 to VK5 again.

VK4ZAZ heard VK1RTA beacon on 144.475 on 4-12. Tropo between VK3, 5 and 6, all December, on 2 metres.

JAs to VK5 on 52 MHz on 11-12.

Albany beacons shifted to Mt. Adelaide, near Albany. VK6WG ready for 1296 MHz.

MARCH 1977

More 2 metres Es, VK4ADC heard VK7ZAE on 30-12, VK5KK heard by VK7PS same time.

2 metre Es solid copy for 45 minutes from VK1 and VK2 to VK5KK and VK5LP on 31-12. Four VK1 stations worked along with VK5NY and VK5ZPS working VK2 only, and several country VK5s working VK1MP.

VK5KK works VK1, 2, 3, 4, 5, 6 and 7 in less than 14 days on 144 MHz!

Tropo on 432 MHz to VK6WG, VK6KZ, VK6ZED, VK6ZBW from VK5KK, VK5NY, etc., on 27-12.

VK7RTW damaged by fire.

APRIL 1977

More on 2 metres, both Es and tropo. VK7PD mobile in Ulverstone heard Brisbane repeater! VK7ZAH was heard in Brisbane exchanging reports with VK3YJL. VK7NR/M worked VK6ZDT, Wagin, via Geelong repeater on 9-2-77. Also on 9-2 UHF mobiles reported to be working from NW Tasmania to VK2/4 area between Armidale and Brisbane!

VK4ZRF, VK4ZSH and VK4ZRQ out for VK2 mid-summer field day report, no Sydney stations, but beacons audible, only Newcastle and Brisbane stations worked with temperature at 42°C plus.

VK5 ATV repeater granted a licence.

VK5QR to VK6WG contacts on 1296 MHz numbered over 8 in just one day alone in February! VK3AKC and VK3ZBJ attempt QSOs but no go. VK6WG being copied in VK5 on 1296 by VK5KK and VK5NY.

EME contacts to VK2AMW include JA1ATL, JA1VDV, K3PGP, F2TU, WB5LUA and FY2AS on 432 during December and January.

MAY 1977

KH6EQI heard in VK5 by VK5ZPW on 27-3-77.

VK5RO heard working a JH6 crossband 52 to 28 MHz on 20-3.

A VK3 heard WB9AK? on 26-3, no other details.

VK8ZCJ (now VK8GB) reports 6 and 2 metre activity in Darwin with VK8VV and VK8ZCU active also. First JA opening for equinox on 13-3-77.

VK2ZTB reports 144 MHz TEP with LU7DJZ being heard by YV5ZZ on Oscar up-link.

Prediction of JA contacts to VK8 from Kyushu on 144 MHz via same mode as surety in light of WRE research.

General conditions of JA licensing from VK3HV.

VK9NI to become active on 6 metres.



PHOTO 4: Reaching for the top on VHF! VK1 amateurs installing the ill-fated Mt. Ginini repeater installation on 12th February 1977. The original repeater antenna system featured 3 bays of 4 gamma matched dipoles fed quadrature (90° out of phase).

JUNE 1977

More JAs and TEP in April. VK3OT works KG6APP and hearing KH6EQI on 50.110 MHz on 9-4-77.

Band open to JA for several hours from VK2, 5, etc., on 9-4 and 11-4-77.

VK5LP says Korean FM on 49.305 and TV on 49.750 very consistent.

KL7HAM active on 6 metres from Shemya Is.

VK6BV reports JA openings to Kalgoorlie on 16-4 and 19-4.

JULY 1977

3D2AZ's only 6 metre contact for years was ZL1QL. Although hearing VK2WI beacon in summer had no other contacts.

VK3AMK reports great success with vertical polarization in Channel 0 areas.

VK4RO hearing KH6EQI on same day as VK5ZPW plus a few times in April. On 17-4 had QSO with KH6GRU 5 x 9, first really long haul DX for the cycle; many JAs through to VK4 and VK8.

AUGUST 1977

Details of JA to W6 contacts in Northern Hemisphere summer.

VK8ZCJ and VK8VV work VS6BE on 6-6 and 7-6-77. Also VK8ZCJ hearing 11th harmonic on RRI in Sumatra on 51.909 MHz on 8-6-77!

VK4ZNC appeals for 6 metre gear for FK8AB.

VK8ZER/6 at Giles Weather Station active on 6 and 2 metres.

SEPTEMBER 1977

Announcement of the Ron Wilkinson VK3AKC trophy.

First of many pleas for use of 50 MHz in VK for coming seasons.

P29HV reports on 6 and 2 metres activity in P29.

VL5SA beacon on 48.450 MHz running 100 watts into 4 element beam pointing to JA from HMAS Coonawarra, near Darwin.

VK2AMW EME site at Dapto vandalised on 25-6-77.

OCTOBER 1977

Reported mid-winter Es during June-July between VK1, 2, 3, 4, 5 and 7.

KC4AAA active on Oscar 6 and 7.

Cycle 21 predicted to be a cross between Cycles 19 and 20.

VS6GG informs that all Hong Kong TV operates on UHF.

VK8NER/ZHR/P6 heard VK5VF from Giles on 20-8 but no contacts.

Uprise in local 1296 MHz activity.

NOVEMBER 1977

KC6PO works JA from Caroline Is. on 6 metres on 11-9-77.

JABZBY copying WB5LBJ/DU6 on 11-9 also.

K3ZYO worked VK2, 3, 4, 5, 6, 8 and P29 last season using 250 mW. VK4KK mentions hearing ZS1ET on MCW on 50.020 at 0700Z to 0726Z on 18-1-1948! The time looks interesting and should be kept in mind for now. Very similar to KH6-ZS6 time.

DECEMBER 1977

Darwin well alive on 6 metres.

JA2IGY back on 52.500 MHz.

KG6 worked in Darwin on 9-10 and 11-10 by VK6VV and VK8ZCJ, the latter working WB5LBJ/DU6 on 11-10 also.

List of active KG6 stations include KG6APP, KG6DX, KG6JDX.

VK3OT worked nine JAs on 11-10. Band open to JA from VK2 and VK5 through October, but no openings in Melbourne.

Complaints voiced about credibility of information from certain sources.

JANUARY 1978

The occurrence of 2 metre TEP is noted for the first time in Darwin. On 27-10-77 VK8ZCJ (now VK8GB) heard JA signals on 144 MHz SSB/CW and 144.34 MHz FM. Unfortunately to miss contact with a JE2. Several letters from JA stations interested in working VK.

VK6BV and VK6ZGQ active from Kalgoolie with 52, 144 and 432 MHz.

KG6APP writes telling of HL9WI, KC6PO, JA and VK8ZCJ contacts.

JAs reported having been available to all States during last equinox.

FEBRUARY 1978

VS6 Hong Kong allowed spot allocations on 52.025 CW and 52.100 SSB.

VK8ZCJ reports the scheduling of KH6EQI beacon beam headings throughout day.

3D2CM is definitely active with 30 watts PEP into 3 element yagi. According to Dick he has a clear take-off in the VK-ZL direction.

P29HV active towards VK, ZL and JA on 6 metres.

J11HHX lists at least a dozen rare DX stations in almost as many countries during last equinox on 6 metres.

P29HV looking for North Queensland stations on 2 metres.

52.050 MHz being clogged by stations working JA DX, while VK7KJ worked KH6NS.

2 metre tropo on 13-11 between VK5 and VK7.

VK5SV hearing VK6WG on 1296 MHz for 90 minutes with a HAND-HELD 3 foot dish. (Would this be hand-held portable 1296 DX?)

VK5ZPW, VK5KK, VK5MT to VK3ZOV in East Gippsland on 432 MHz 5 x 9 and 500 miles over land.

On 2-1-78 VK2BXT at Moree worked VK7ZAH, VK7DA and VK7JG on 144 MHz.

MARCH 1978

First widely worked 144 MHz DX out of VK8, giant Es opening to VK2 and VK4, and one-way to VK5. VK8ZGF and VK5ZSH/8 worked VK4ZRO, VK2YDY, VK2BXT, VK4AZE, VK2ZAY; and VK5ZSH/8 heard by VK5ZWR and VK5KK all on 16-1-78.

Report of enormous workings between VK3, 5, 6 and 7 in last tropo season.

VK2ZTB reports on RS satellites.

VK0GM setting up for Oscar operation from Casey Base.

APRIL 1978

Two new world records in VK. VK6WG and VK5QR on 2304 MHz for contact on 17-1-78 with 5 x 9 signals, VK5QR using SSB; VK6XY and VK3ZOV work on 432 MHz to establish a new world record of 1600+ miles.

New 144 MHz record to LU5DJZ and KP4EOR on 12-2-78, distance 3,977 miles.

VK8GB contacts JH6TEW for his first JA 2 metre contact via TEP on 24-2-78.

VK8VV also working to JA.

New SMIRKS include VK3OT, YJ8KM and VK5KK.

JAs excellent to southern States during February.

VK5KK hearing VK7RTW on 432.475 to S7 on 28-2-78, distance 700 miles.

MAY 1978

Large scale openings on 6 and 2 metres in Darwin. Stations worked/heard in VK4 and VK8 included KG6JIH, KG6JDX, KG6DX, HL9WI, KH6HI, KH6EQI, KH6IAA, KH6JSI and VK4IK/KG6.

144 MHz contacts from Darwin to JA4 and JA6 areas only.

On 1-3-78 XE1GE heard ZL TV audio on 50.750; same day JA5CMO worked CE3OK on 6.

On 19-3 KH6JSI worked LU7FA and LU3HFU.

26-3 KH6 to PY2CSS and PY5WBR. VK4ZNC to KG6JDX and KG6JIH on 15-3.

VK4ZSH "partially" worked P29ZWW on Ch. 40 FM on 22-1-78.

VK2AMW Dapto EME project terminated after extensive vandalism to site.

JUNE 1978

More 6 metres DX. FK8AB active to JA on 28-3, same day VK2BXT and VK2BOV worked KG6DX.

1-4-78 VK5KK to KG6DX and JA to YJ8KM. 12-4 VK3OT to KG6DX.

Large night time openings on 13-4 and 16-4 from VK5 to JA1, 2, 3, 4, 5 and 6.

HL9WI working into Perth on 9-4, and HL9WI heard WA6JRA beacon on 9-4 also.

VR4DX looking for 6 metre gear, while VK2ZTB reports on TEP type 2.

JULY 1978

6 metres continues. YJ8ZV worked in Japan on 13-4.

Letter from late K6RNO indicates stations heard or worked during 1958 including VK5RO and VK5BC! (Plus VK2s and VK4s of course.)

3-5-78 HL9WI worked VS6HK, indicating some activity in Hong Kong.

JAs still being worked in Darwin on 2 metres in May. VK8GB total of 2 metre JA contacts for equinox now 359!

VK3OT sent 157 QSLs to JARL for \$6.11 for season's workings!

Mt. Dundas Channel 5A proposal causing trouble already.

New Australian 10 GHz record between VK4ZSH and VK4ZNC on 14-5-78 with 5 x 7 signals over distance of 106.1 miles.

AUGUST 1978

P29 activity on 6 metres. Contacts made to many channels in South Pacific on P29 50 MHz band.

WA4TNV/KL7 operates out of KL7FBI club station on 6 metres.

HL9WI running 6 metre skeds with LU3EX.

The mysteries of "Sporadic E (Es)" revealed with reference to Skylark rocket launchings from Woomera in late fifties. 1971 launching managed to measure exact proportions of an Es layer.

SEPTEMBER 1978

An interesting look into the past on 6 metres . . . did you know K6GDI was the first to obtain WAC on 6 metres?

ARRL WAS listings shows EI2W with 35 USA States! SM7ZH had 29, PZ1AE 26.

LU3EX to JA6FR record of 1,200 miles still standing in 1978.

Details of meteor showers for following months.

And the problems of Channel 5A; proposed Ethnic TV using Channel 5A.

OCTOBER 1978

The band has yet to shut in Darwin on 144 MHz!

A list of ten active UA stations worked on 2 metres from Japan.

VK2BD working VK7 in mid-winter Es. Some more past news. Details of all the firsts in 1947 cycle. This includes the one time world record between VK5KL and WTACS/KH6 on 6 metres.

NOVEMBER 1978

VK5LP on holiday and a "fill-in" editor employed!

Details of early VXX4, VK5, VK8 to JA openings in September.

Auroral openings on 6 metres and 2 metres between VK3, 5 and 7 on 28-8-78.

VK5ZAU provides some "overseas" DX from Kangaroo Island on 144, 432 and 1296 MHz around 25-8-78 to Adelaide and points north over a 150 mile path well shielded from line of sight.

IC401 hits the market place; modifications to commercial 2 metre rigs.

DECEMBER 1978

KH6 to VK2 and VK5, first time in 20 years, KH6EQI to VK2BXT, VK2YDY, VK5KK, all on 16-10-78.

JA and other news from Darwin looks like a list from the JA Call Book.

FO8DR active on 6 metres.

Auroral propagation on 29-9-78 with VK5KK to VK7ZAH on 144 MHz, plus 6 metres between VK1, 2, 3, 5 and 7.

VK9ZM leaving Willis Island on 6-12-78.

JANUARY 1979

Beacon format changed to list stations in order of frequency, 45 amateur band beacons and 7 TV sound channels listed.

First mention of the Army type PRC10 transceiver for listening 38 to 56 MHz.

VK8GB works CR9AJ for country 13 on 6 metres, continues to work many JAs on 2.

Observations show 144 MHz contacts to Japan start mostly about 1100Z except on very active days when contacts may start 1030Z. Band remains open for 1 to 1½ hours.

Peter Wolfenden VK3ZPA, Chairman VHF/UHF Advisory Committee, reports there is unlikely to be any further proliferation of Channel 5A.

FEBRUARY 1979

KH6EQI and KH6HI again on 6. Many JAs, band open for some contacts almost every day during October and November.

ZLs on 6 on 5-12. P29ZNL works KH6EQI (KH6HI).

VK works 3D2CM 15-12, KH6IAA 19-12, P29ZWW and ZL3QK 20-12.

ZLs again 23-12, some using handbags and whips! 31-12 more ZLs.

VK5KK total of 621 contacts with JA stations during 1978.

VK5ZBU and VK5RO hear WA6JRA and TI2NA beacons.

22-11-78 VK5KK hears VK6WG on 1296.1 MHz 5 x 2.

24-12-78 VK3 to VK5 on 144 MHz. 28-12 VK6 on 144, 432, 1296 and 2304 MHz.

New world record set on 1296 at 1,310 miles between Wal VK6KZ/P and Chris VK5MC on 29-12-78. David VK5KK also worked VK6KZ/P about same time, on 1296.

Hal VK4DO worked 1357 JAs on 6 to 13-11-78.

VK4ZJB confirms there is a Channel O translator between Townsville and Cairns.

Carnarvon working through Busseton Ch. 8 repeater 150 miles south of Perth.

16-12 FK8AA worked by VK3OT, VK3AMK and VK3AKK.

27-12 FK8AB and FK8AX to VK2ZBD and others.

Passing of Sam Harris W8UKS/W1FZJ/WIBU on 6-11-78 recorded.

7-1-79 VK2 and VK4 work New Zealand on 2 metres. Same time VK2BQJ works

ZL1TAB on 432 MHz — first VK contact to another country on 432 MHz.

Alice Springs repeater VK8RCA Ch. 8 now on, 19 watts output.

MARCH 1979

ZL2MHF beacon operating on 52.510. 4 hours of ZL to VK5 on 14-1, plus many JAs.

VK2YJC worked more than 200 ZLs on FM during the big January 2 metre opening.

Lyle VK2ALU confirms 432 EME project at Dapto will be shifted to safer place.

YJ8PV now being heard in Brisbane more often than southern beacons.

Good 2 metre tropo conditions between VK4 and VK2.

Col VK5RO having constant contacts with Frank VK2ZI in Broken Hill on 2 metres.

APRIL 1979

Bob Grimm K6RNQ joined silent keys on 13-1-79, well known for his extensive VHF activities, especially 50 MHz during cycle 19.

Wal VK6KZ says he wants to try the path from Augusta in the south-west of WA for his portable jaunts — this is about as far west as one can go!

Hal VK4DO has been on air for 56 years, made life member of Central Queensland Branch of WIA.

JA2BZY worked 27 countries on 6 metres at 3-2-79.

SMIRK lists 42 countries as allowing 6 metre operation at present.

6 metre liaison net now established on 26.885 MHz, much info being swapped.

MAY 1979

Newspaper report that General Manager of Channel O said the change to Channel 10 in about 9 months would cause little inconvenience.



PHOTO 5: Another well-known operator on VHF/UHF — Reg VK5OR in his well-equipped shack.

VK3AMK said many old guidelines of years ago for 6 metre propagation are no longer valid.

Colin VK6CM and Roger VK6NR created a State first bi-directional contacts on 10.280 GHz on 14-2-79, distance 25 km for 10 mW.

Peter VK5ZCT in Port Lincoln used Bunbury repeater Ch. 6 to contact Perth. VK2ZQT has a manned repeater on 432 MHz.

First known opening Cycle 21 between W6 and Geelong on 11-3-79.

KG6DX extremely strong to VK2, 3 and 5 on 18-3, and H44DX bursts forth on 6.

TEP type propagation noted on 432 MHz between Rhodesia and Greece on 20-3, distance 6,623 km!

HS1SD active from Thailand on 6 metres, and VQ9KK (?) active on Diego Garcia.

VK8GB heard KC6IN, Caroline Is., also K25NW 50.110 on 11-3.

ZS6LN beams to VK 0600 to 1000Z on 50.050.

HL9WI reports hearing VK8s on 144.110 on 8-3.

4/3 K7KV to VK4RO; 10-3 Okinawa to VK5; 11-3 VK3 to W6; WB6NMT heard in Adelaide.

ZL1AQR used crystal locked DSB and ZL3QK used 80 metre dipole to work W stations during big opening on 10-3.

WA4TNV/KL7 worked VK1, nine VK2, VK4, four VK5 to 5 x 9 on 13-3, and on 17-3 W6XJ works into VK2.

HL9TG works LU3EX and LU8AHW for possible new 6 metre world record.

Chris VK5MC works ZE5JJ on 432 MHz EME 31-3-79.

JUNE 1979

28-3-79 HL9TG worked over wide area of VK2, 3, 4, 5, 6, 7 and 8!

3-4-79 XE1GE heard by VK2BYX, VK3OT, VK5KK and several other VK5s on 50.009.

VK4RO works KZ5NW, Canal Zone, W4YYS, WB4GHA and heard TI2NA.

VK1FT worked W6XJ using 10 watts, signals 5 x 9!

10-4-79 VK5KK worked split frequency to XE1GE, heard by many others.

12-4 W to VK5. 13-4 VP1MT to VK2, 3 and 5. 14-4 XE1GE again.

16-4 ZS6LN worked KH6HI, KH6NS, KH6JSI and KH6IAA, the latter about 11,900 miles.

18-4 3D2CM works W4, W5 and W6. ZK1AA active on 50, 51 and 52 MHz. 9N1BMK to operate from Nepal. YBOX special DXpedition to Indonesia 28-4 to 8-5.

20-4 VK5ZBU and VK5AVQ hear VE1SIX beacon.

22-4 VK5LP and VK5KK hear W6XJ being worked by VK7JG.

26-4 an outstanding day for DX — FO8DR heard, others heard, some worked include KG6DX, KH6IAA, many JAs, HL9TG, KA6ED, KG6JEI, KG6JFK, ZK1AA, JDIUM, VQ9KK, H44DX, JDIYAA, YJ8PV, KH6EQI, also VK2BQJ reported working over 200 JAs!

VK3ATN and VK5MC active on 432 EME working VETBBG, ZE5JJ, ISMSH, etc.

Moves to supply VK0BC with 6 metre equipment.

5B4AZ Cyprus and ZB2BC, Gibraltar, have permits to operate on 6 metres, and ZS6LN, South Africa, worked 5B4AZ with 70 mW output!

JULY 1979

Beacon list now shows 58 stations.

Large trans-continental backscatter — VK2BQJ to VK6WD with VK5KK in middle.

28-4 W6XJ to VK5KK crossband 28 to 52 MHz.

30-4 YBOX works VK5KK, VK4RO, VK8GB, VK8VV and VK8ZBB.

2-5 VK8s work 9N1BMK Nepal, also hearing W5, W6 and W0 on 50 MHz.

VK8VV worked KA5CEB, and W6XJ works VK8GB, VK8VV and VK8DI on 52 MHz.

9N1BMK worked by H44PT, KA6HF, K9PNT/DU2. CR9AJ on but hard to catch. VU2RM on.

SMIRK warns all operators that no awards will be made which include out-of-band contacts. ARRL very upset about these contacts, too.

Phil VK2BYX has now worked 13 countries on 6 metres.

News from Europe showed first W to Europe opening on 10-2-79 between WB2RLY/VE1 and G3COJ, crossband 50 to 28 MHz. DK2ZF hearing ZS6PW beacon on 50.030. EI2W in Dublin still licensed to operate 50 MHz.

New trans-equatorial 144 MHz record established between SV1DH in Greece and ZS6LN, South Africa, on 13-2-79 at 7,117 km, distance later extended to 7,127 km by SV1AB!

G3 working ZS6 crossband 28 to 50 MHz.

David VK5KK receives his SMIRK 100 Award.

VK8HW and VK8EW work to Japan on 2 metres FM.

AUGUST 1979

6 metre DX gone quiet but 2 metre tropo good.

1-6-79 VK5SV worked VK2DAB, VK2BEV, VK2ADZ, all in Griffith, on 144 SSB; VK5ZDR worked VK2DAB, David VK5KK worked him as well as VK7ZAH, VK5CK is content to work 7 stations in Melbourne! Good tropo on 6 metres to over 300 miles.

2-6: 2 metres still open to Griffiths and Melbourne, plus VK7ZAH 5 x 9.

VK7ZTA works repeaters in Canberra, Newcastle and Melbourne.

One-way reception of signals on 432 MHz between SV1AB, Athens, and ZE5JJ, Rhodesia, distance 6,300 km, longest 432 terrestrial reception.

SEPTEMBER 1979

14-7-79 best ES for winter — open from VK5 to VK2 and VK4, VK2 and VK3 to VK7, and on 15-7 to ZL1AVZ.

24-6 good tropo on 2 metres, VK2ZRU works VK3AUR, while VK2YHS and VK2BQJ work VK5MC.

Beacon on 144, 432 and 1296 being built for installation at Cape Leeuwin on southwest tip of WA.

Ed Roche Trophy made available for North Queensland operators for VHF achievements.

OCTOBER 1979

Auckland VHF Group placing beacon on 52.100 MHz, while the Wellington Group are operating a 10 GHz beacon!

YJ8PD to increase power to 500+ watts on 6 metres with driver stage supplied by VK5KK and VK5LP.

T2AAA (ex VR8) hoping to get on 6m. ZS5NW leaving Canal Zone, leaving only KZ5JM there on 6 metres.

C21AA DXpedition successful, 10 countries worked on 6. HS1WR active in Thailand.

28-7 opening to H44 from VK4 and VK8. VK9NI most emphatic he will not be operating on 6 metres.

Andy VK6OX and Tony VK6BV have successful 6 metre skeds via meteor scatter.

New distance records announced: VK3OT to XE1GE on 6 metres at 13,768 km; VK2BYX to W6XJ on 6 metres at 12,092 km; VK4VC to ZL2BFC on 2 metres at 2,571 km.

VK5KK receives QSL from 3D2CM, VK8GB receives QSL from KX6BU.

ZLs working to W again on 6 metres.

W0YZS completes first WAS on 70 cm for USA award.

70 cm spans the Pacific — WB6NMT to KH6HME on 18-7-79 for new terrestrial record on 70 cm, while VK8GB looking to work JA on 70 cm.

Dick K2RIR working on an array of sixteen 19 element yagis for 70 cm.

Reports on new pre-amplifiers for 70 cm with NF of less than 1 dB. 5B4AZ allocated 50.499 MHz for CW working.

NOVEMBER 1979

VK2ALL says his main interest centres on 10 GHz, at the moment pending re-installation of 432 MHz EME equipment.

CW signal copied on 44.250 MHz on 23-9 signing "VPS".

23-9 JA5CMO worked several LU stations on 50 MHz from 0100Z.

6 metres not dull overseas: JA stations recently have worked VK4, VK6, VK8, P29, K52, KG6, KH6, H44, YJ8, F08, KX6, HS1, JDI, SW1, A35, 3D2, etc.

N6DX DXpedition successful, but mainly JAs worked, plus KG6 and YJ8.

K9PNT/DU2 can now operate on 52 MHz with FT620 and quad antenna.

Rumours say VU2RM doesn't have a 6 metre allocation.

VK3OT and VK2BYX/ATZ to have DX-pedition to Lord Howe Is. 27-10 to 31-10.

VK5KK fires up temporary manned beacon seeking permit to operate full time.

VK5LP offers info on 13 element beams in effort to promote interest in 2 metres SSB/CW.

Carlos TI2CF hoping to be on 6 metres by Christmas.

Gary W6XJ wins SMIRK Party Contest with 22,720 points, followed by Steve VK3OT, operating as YJ8OT, with 588 points. David VK5KK wins Australian section with 13 points!

CONCLUSION

And on that note we can close the November 1979 AR and say that 10 years of very interesting events have been covered. Scattered throughout the many words taken from the past 10 years one can confirm the immense value which has been gained from having a nationwide coverage by CW beacons, on many occasions they have served as a warning of impending openings, sometimes they have let us down due to being on elevated sites and coastal ducting and inversions have been below them, but overall they have been very worthwhile. They have certainly also helped much 6 metre DX in other places of the world where beacons are operating, and few countries are without them.

If the research needed for and the writing of this long article, which cannot be successfully shortened, serves to instil enthusiasms in more amateurs to enjoy the fruits of the VHF/UHF bands, then the work has been worth while. If anything more remains to be done in the way of achievements in amateur radio, then it will be done on VHF and UHF, where, despite the inroads made by availability of commercial equipment, much experimenting is still being done, perhaps on a lesser scale than previously, but the dedicated are still to be found there, the result of their work will be the continual lengthening of record distances on all bands available to them.

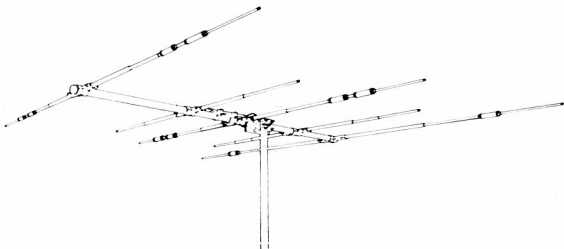
Thought for the decade: "We judge ourselves by what we feel capable of doing, while others judge us by what we have already done."

The Voice in the Hills. ■



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Longest Element.....	31 feet
Turning Radius.....	18 feet
Surface Area.....	6.4 sq. feet
Wind load.....	164 lbs
Weight.....	50 lbs

VSWR at resonance.....	less than 1.5:1
Power Input.....	Maximum Legal
Input Impedance.....	50 ohms
-3dB Beamwidth.....	66° average
Lightning Protection.....	DC ground
Forward Gain.....	8.5dB
Front-to-Back Ratio.....	25 dB

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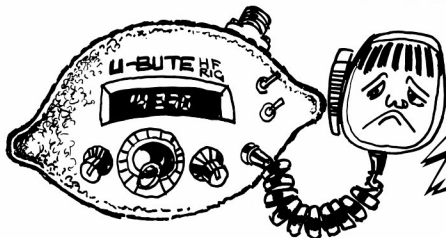
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ACCESSORIES:
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**'PLANNING AHEAD' was
Amateur Radio Action's
introduction (review in June
issue).**

Here's some more of what they said:

'... physically very attractive... one of the finest velvet smooth tuning arrangements on any transceiver in the world... VFO stability is superb... receiver performance is excellent... sensitivity is very good... audio output is clean... performance [of the noise blanker rated 'great' on the FT1012] if anything is better... the transceiver is well laid out and simple to operate... makes an ideal mobile rig... expected to retail for around \$850 and therefore on present standards represents good value...'

One minor discrepancy: our price for the FT-707 is over \$100 less than the price quoted above. This must mean it is far and away the best value transceiver on the market in Australia!!!

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OSCAR for Beginners

Prepared by the staff of the American Radio
Relay League
Newington, Connecticut 06111
Submitted by Bob Arnold VK3ZBB

WHAT IS OSCAR?

OSCAR is the name given a series of satellites designed and built by amateur radio operators from several nations of the world. There have been eight OSCARs (Orbiting Satellites Carrying Amateur Radio) in the series. The first OSCAR was put into orbit in 1961, just four years after Sputnik 1 brought the world into the space age. OSCAR 1 was the world's first non-governmental satellite, having been designed and built by a group of volunteer amateur radio operators from California. The two most recent OSCARs, numbers 7 and 8 are still circling the earth, providing two-way communication between amateur radio stations up to 5,000 miles (8,000 km) apart.

HOW DO THEY GET UP THERE?

When an OSCAR is planned, arrangements are made well in advance with NASA, the National Aeronautics and Space Administration, to schedule a launch alongside another satellite. OSCAR 8, for example, was launched "piggyback" with a Landsat C Earth Resources Satellite. The most recent OSCARs were designed and constructed under the supervision of AMSAT (the Radio Amateur Satellite Corporation), a non-profit scientific organisation in Washington, D.C. Amateur radio operators from Australia, West Germany, Canada, the U.S. and Japan have contributed time and materials, making the satellites a truly international effort.

WHAT DO THEY DO?

As active communications satellites, OSCARs relay radio signals sent up to them from ground stations, allowing amateur radio operators all over the world to talk to one another. Communication across oceans is common, bringing people from different nationalities and cultures into direct contact. OSCARs 7 and 8 can receive and transmit several different types of communication—voice, Morse code and slow-scan television, among others. The "transponders" aboard the satellites make communication possible. AMSAT-OSCAR 7 contains two transponders which alternate regularly (see "NOTES" on reverse). One of them, "Mode A", converts signals sent to it on the amateur 2-metre band to the 10-metre band; the other, "Mode B", converts 70 cm signals to signals in the 2-metre band. AMSAT-OSCAR

8 also contains two transponders. Its "Mode A" is nearly identical to the one aboard OSCAR 7 (2-10m), but the other, called "Mode J" after its Japanese builders, converts signals from 2 metres to 70 cm. The precise frequencies are listed in the table on the reverse of this sheet.

Live demonstrations of the OSCAR satellites are held in schools to help teach general science, foreign languages, physics, astronomy and electronics. In addition, they can be used for emergency communications when a natural disaster, such as an earthquake, knocks out other ties to the outside world. Successful experiments have shown that the OSCARs can relay medical information such as electrocardiograms from a disaster area to a hospital and help locate a downed aircraft.

HOW CAN I HEAR OSCAR?

You can hear OSCAR's signals when the satellite rises above your horizon. Since it is travelling at nearly 16,000 m.p.h. (25,000 km/hr.), it soon speeds far over the horizon and out of range. But you will have up to 25 minutes to hear the satellite as it passes overhead. The radio or receiver you'll need to pick up OSCAR's signals is one that covers the amateur 10-metre band. In most cases you must have an amateur radio licence to talk through OSCAR with a 2-metre amateur transmitter (although anyone can listen!). The OSCARs are the only satellites that can be used with such relatively simple equipment. For further information on becoming an amateur radio operator, contact your WIA Divisional Officer.

WHEN CAN I LISTEN FOR OSCAR?

To determine when to listen for the satellite, you have to know something about its orbit. Both satellites are in almost circular polar orbits, which means they pass nearly over the North and South poles, OSCAR 7 at a 910-mile (1,450 km) and OSCAR 8 at a 540-mile (900 km) altitude. They come within range of every place on earth twice a day, at about the same times each day (morning and evening). Since each orbit takes an exact amount of time (called the "period"), a little under two hours, and the earth rotates a certain number of degrees longitude during the orbit (called the "increment"), it is easy to determine when the

satellites will be within range of your particular location. The ARRL OSCAR-LOCATOR is a simple device that lets you visualize how the satellites circle the earth and predict when you will hear them.

WILL THERE BE MORE OSCARs?

Yes, dedicated volunteers in Japan, West Germany, the U.S. and the United Kingdom are working on various components of future OSCARs. One of these, the AMSAT Phase III anticipated for launch mid-1980, will have an elliptical orbit that will keep it within range of the entire Northern Hemisphere for several hours at a time. This will expand the amateur satellites' practical uses significantly.

The group of radio operators in California who put together OSCAR 1 expended just over \$63.00 to design and build it. Although the more recent satellites are more complex and expensive, they are still designed and constructed by people from various professions who share a common interest—furthering the amateur satellite programme that has contributed so much to bringing people closer together.

For further information, see *Getting to Know OSCAR from the Ground Up*, a practical manual on radio amateur satellite use published by the American Radio Relay League, 225 Main Street, Newington, Ct. 06111, at \$US5.50 p.p., also available from technical book shops, Dick Smith Electronics stores and Magpubs. ■

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No. 1 — The ICOM IC280

Have you ever wanted to know more about a piece of equipment except its price and have never got around to gaining the information you desire? Perhaps you are sick of wading through countless magazines to find some small portion of a circuit diagram needed to complete your own personal file on a piece of equipment?

In this and future issues of Amateur Radio we will feature a particular rig showing details of circuitry, specifications and design to enable readers to readily familiarise themselves with amateur equipment on the market today. For the newcomers we will also detail older equipment from transceivers for VHF to receivers for HF. This will enable readers to build a reference library on equipment, a handy addition to the shack.

This month we feature the Icom IC280 2m FM transceiver. The IC280 uses a P-Channel MOS 4-bit microcomputer to control frequency, band edge detection and the display. The 3 channel memory is controlled electrically by the use of a 256-bit RAM area. The circuits for these IC280 functions are equivalent in capability to conventional circuits having a large number of C-MOS MSIs.

SPECIFICATIONS — ICOM IC280

GENERAL

Numbers of semi-conductors

Transistors	37
FET	4
IC	26
Diode	49

Frequency coverage

143.90-148.11 MHz
143.900 ~ 146.000 MHz: 5 kHz steps
146.010 ~ 148.110 MHz: 15 kHz steps

Memory channels

3 channels, any inband frequency programmable

Usable conditions

Temperature: -10°C-60°C (14°F-140°F)
Operational time: continuous

Frequency stability

Within ± 1.5 kHz

Antenna impedance

50 ohms unbalanced

Power supply requirement

13.8V DC $\pm 15\%$ (negative ground) 3.0A Max.

Current drain

Transmitting	HIGH (10W)	Approx. 2.5A
	LOW (1W)	Approx. 1.2A
Receiving	At max. audio output	Approx. 0.7A
	Squelched	Approx. 0.5A

Dimensions

156 mm (W) x 58 mm (H) x 228 mm (D)

Weight

Approx. 2.2 kg

TRANSMITTER

Output power : 10W (HIGH), 1W (LOW)

Emission mode

16 F₃

Modulation system

Variable reactance frequency modulation

Max. frequency deviation

± 5 kHz

Spurious emission

More than 60 dB below carrier

Microphone

600 ohms dynamic microphone with push-to-talk switch
(IC-SM2 electret condenser microphone may also be used.)

Operating mode

Simplex, Duplex (± 600 kHz from receive frequency)

RECEIVER

Receiving system : Double conversion superheterodyne

Modulation acceptance

16 F₃

Intermediate frequency

1st: 10.695 MHz
2nd: 455 kHz

Sensitivity

More than 30 dB S + N + D/N + D at 1 μ V
Less than 0.6 μ V for 20 dB Noise quieting

Squelch sensitivity

Less than 0.4 μ V

Spurious response rejection ratio

More than 60 dB

Selectivity

More than ± 7.5 kHz at -6 dB point
Less than ± 15 kHz at -60 dB point

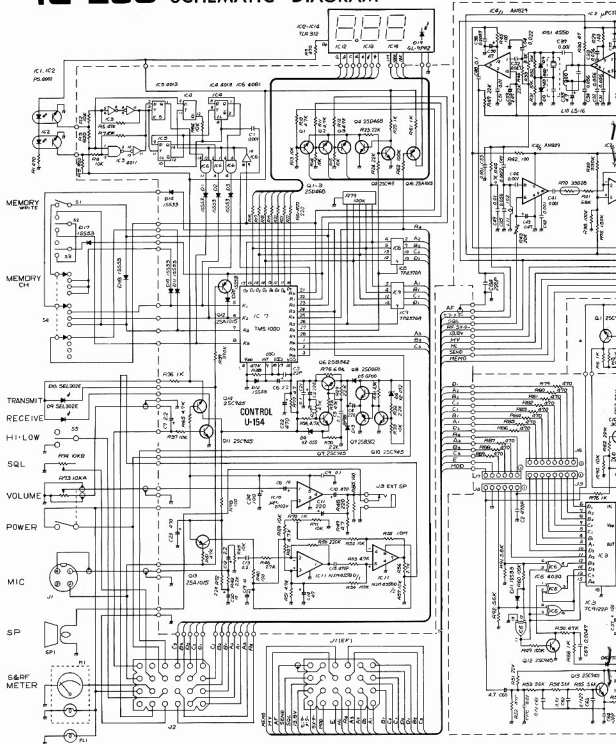
Audio output power

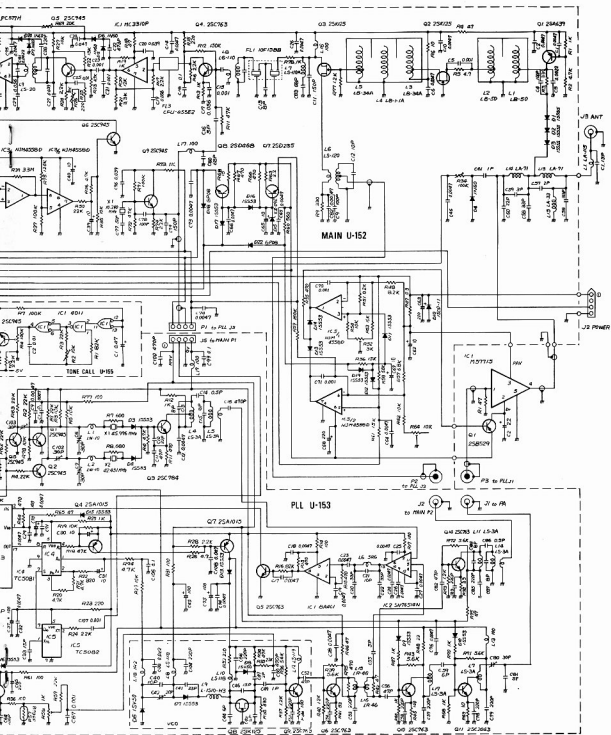
More than 2.0W

Audio output impedance

8 ohms

IC-280 SCHEMATIC DIAGRAM



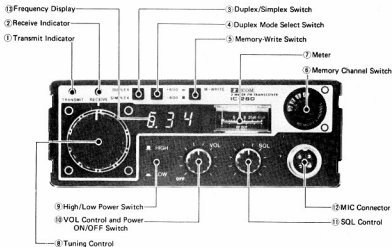


The control portion (front panel) of the IC280 can be separated from the rest of the unit and the two parts can be connected with a cable. The control unit is approximately one-third of the whole unit.



PHOTO 1 (above): The IC280 and at right (PHOTO 2), showing front control functions.

FRONT VIEW



Microphone plug exploded view

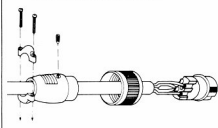


FIGURE 1

For newcomers to VHF: be sure to use a suitable VSWR meter designed for VHF when tuning an antenna for 2 metres. A diode meter not engineered for VHF can produce an error up to 40 per cent. It is advisable when adjusting a mobile antenna to do so with the motor running preferably above idling speed ensuring proper voltage level to the transceiver.

Microphone connection

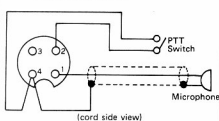


FIGURE 2

(Thanks to Vicom International for the supply of photographs)

(TOP)

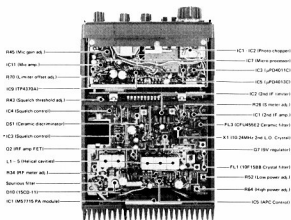


PHOTO 3: Top view of circuit layout.

(BOTTOM)

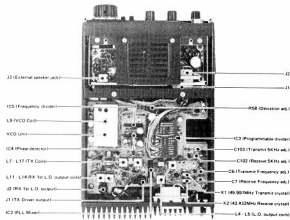


PHOTO 4: Bottom view of circuit layout.

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- ☐ Two hinged circuit boards for easy maintenance.*
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- ☐ ICOM's quality backed by 90 day warranty
- ☐ At \$279 the ICOM IC2A offers the best price of the "big three".

Accessories coming soon:

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- BP-6 Nicad pack, 5W output
- CP-1 cigarette lighter charger
- HM-9 Speaker/microphone
- LC-1 Leather case

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* See review "Amateur Radio Action" Vol 2/13

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AMATEUR SATELLITES

R. C. Arnold VK3ZBB

AMSAT PHASE III — COUNTDOWN No. 6

Unfortunately this could not be included in AR prior to launch date but the information may be of interest:—

By the time that you receive this last Phase III Countdown, the Phase III Satellite and FIREWHEEL will be at Kourou, in French Guiana, ready for the launch with the ESA LO2 Mission, nominally on 23 May 1980.

The LO-2 launch has a far wider latitude than most previous launches of OSCAR satellites, which previously accompanied meteorological and weather satellites demanding a precision window, and A-O-9 may be launched between 1100 and 1430 UTC on any day from 20 May until 8 June 1980.

Due to the memory problem vulnerability under hard cosmic radiation bombardment a new dynamic memory has been built by DJ4ZC, but with only half the memory of the original. Some limitation in the versatility of both the CW and RTTY store in the general beacon may be expected.

The antenna system also has been redesigned and modified in order to ensure encompassment and good housing in the payload enclosure.

The final mass of the Phase III satellite is 85 kg, this being inclusive of the kick-motor-unit, the propulsion mass of which alone is 30.16 kg. It has a specific impulse of 264 seconds, AV = 1168 m/second.

The factors for the initial (transfer) orbit are as follows:—

Height Apogee: 35,800 km. Height Perigee: 200 km. Inclination: 17.50. Eccentricity: 0.7302. Initial argument of Perigee: 189.7°. Shift: 0.7427°/day. Period: ca. 10.5 hours.

For the final orbit, following kick-motor firing:—

Height Apogee: 35,800 km. Height Perigee: 1500 km. Inclination: 57.55°. Eccentricity: 0.6852. Shift: 0.0714°N per day, e.g. 26.0897° per year.

Potential users are advised that whilst the orientation of circular polarization of the spacecraft's 435 MHz receiving uplink

UOSAT LAUNCH CONFIRMED

NASA has formally agreed to launch Britain's first spacecraft, UOSAT. It will be a secondary payload on the launch of the Solar Mesosphere Explorer mission from the Western Test Range in California. Launch is present scheduled for 30 September 1981 and the Thor-Delta rocket will place UOSAT in a circular polar orbit at a height of 530 km.

The purpose of the spacecraft is primarily educational and it is being constructed at the University of Surrey. See AR August 1979 for details of the anticipated onboard equipment.

"ORBIT" MAGAZINE

AMSAT members should have now received their copies of the first edition of the new magazine "ORBIT", which replaces the AMSAT newsletter. The volunteer editorial staff must be congratulated on an excellent production.

"ORBIT" is sent free to all members of AMSAT (extra for airmail) and all satellite enthusiasts should subscribe in order to be up to date with AMSAT happenings. The March edition contains articles on:—

- Radio Transmissions from Outer Space by ZS1BI, which discusses the availability of signals from some seventy satellites transmitting on the 136/7 MHz and the 149 MHz bands. These range from Alpha I, launched in 1962 — yes 1962 — to Cosmos 1092, launched in 1979.
- 70 cm Satellite Antenna Techniques by WDFAB — some interesting ideas for satellite antennae.
- Lots of interesting information on the Phase III satellite by G3ZCZ and WA2LQO.

The AMSAT address is PO Box 27, Washington, DC 2044, USA, and as from 1st July the subscription will be \$US20 per annum.

SPACECRAFT DATA

Orbital Data (March 1980):

A07 progresses an average of 28.836363° W per orbit in a period of 114.943333 minutes. A08 progresses an average of 25.801665° W per orbit in a period of 103.206666 minutes. A07 operates on Mode A and Mode B on alternate days (but see jottings).

Operating Modes:

A08 modes of operation are Mode A, Monday and Thursday; Modes A and J,

having worked VK3, ACR, BWC, ZBB, YQX. He is looking for a VK7 to achieve a new and greater distance.

Cedric VK6CD has probably the clearest and strongest signal on A07, B — he runs only 9 watts — who says high power is necessary?

We are still looking for a VK3 enthusiast to provide satellite notes for the weekly Divisional broadcast and liaise with me in my capacity of Federal Co-Ordinator.

During May A07 has been acting peculiarly as it did this time last year. The beacon transmits garbage and acquisition is rarely made earlier than seven minutes after the calculated time. The problems are probably due to the satellite flying in partial darkness — see my earlier reference to an article in "Radio Communication".

ZL1AOX is operating a control station for Phase III.

Pat G3IOR is looking for records of operating experience by VK amateurs. I shall be grateful if operators, particularly "old timers", will take a little time to outline their experiences during the past 20 years, and let me have them as soon as possible. Participation will ensure a permanent record will be maintained, and one day I hope our experiences will be printed in "Amateur Radio".

POSTSCRIPT

As we go to press we have some sad news of OSCAR Phase III. The satellite was launched on Friday, 23rd May, at 1429Z but unfortunately the main rocket failed after approximately three minutes, resulting in an uncontrollable spin which caused the rocket and both the professional and the amateur satellites on board to land in the Atlantic Ocean. At this stage it is not known whether the back-up satellite is available for early launch but it is presumed that development of the Phase III satellites will proceed. It is hoped that much of the data which has been previously disseminated through Amateur Radio will be applicable some time in the future.

This incident is a great disappointment to participating amateurs in Australia and is a sad blow for AMSAT and the satellite group in Germany, who devoted so much time and money to the project. The failure was completely beyond the control of the amateur fraternity.

Spacecraft Frequencies

	Craft	Uplink	Downlink	Beacon
A07	Mode A	145.850-145.950	29.400-29.500	29.502
	Mode B*	432.125-432.175	145.975-145.925	145.972
A08	Mode A	145.850-145.950	29.400-29.500	29.402
	Mode J*	145.900-146.000	435.100-435.200	435.095

antenna remains right-hand circular that of the 145 MHz transmitting downlink antenna shows LEFT-hand circular.

The balance of this report was circulated to Divisional Satellite Co-Ordinators for dissemination via the Divisional broadcasts.

Tuesday and Friday; Mode J, Saturday and Sunday. Wednesday is an experimental day and may be on Mode A, Mode J or Mode D, the recharge state.

JOTTINGS

9M2CR in Port Dickson, Malaysia, has achieved his furthest A07, B, contacts,

NOTE MAGPUBS REMINDER

Not handling subscriptions to Overseas magazines, except Break-In and VHF Communications.

As already advertised.

MAGPUBS

P.O. Box 150, Toorak, Vic. 3142

SPOTLIGHT ON SWLing

Robin Harwood VK7RH
5 Helen St., Launceston, Tasmania 7250

What is Short-wave listening? Is it different from operating a ham station or a CB? Is it expensive? Do I need a licence?

These are the most often asked questions by those uninitiated in the art of short-wave listening, even from those with technical or operating experience over a number of years. This column aims to present each month information not only for the beginner, but for those advanced in electronics to AOCOP and beyond. Short-wave listening or monitoring is an integral part of radio telecommunications.

In the radio spectrum, frequencies of between 3,000 and 30,000 kilohertz are known as the High Frequency Bands. These frequencies carry signals over many thousands of kilometres, whilst medium frequency signals are for local to medium areas of up to 200 kilometres. The distances covered on HF are dependent on several factors—the time of day, the season, the frequency chosen, and the power of the transmitter. However, we will not get into propagation at this stage. Those interested in SWLing, concentrate on listening to signals outside the local area, to long distance or DX signals as they are known.

What do the SWLs listen for? Many things—for example, it may be a broadcast of a concert live from the Albert Hall in London; Mass from the Sistine Chapel in the Vatican; perhaps a debate in the United Nations Security Council in New York, or a Japanese fisherman thousands of kilometres away from his home communicating with other trawlers scattered throughout the oceans of the world. They also could be listening to communications between the pilot of a Jumbo Jet and an airport in Europe; maybe an orbital satellite carrying signals from deep space.

As can be seen, there are many facets of short-wave listening. Some concentrate exclusively on specific areas such as foreign broadcasts, propagation, utilities, amateur radio and current affairs, etc.

Short-wave broadcasts have been going on for about 50 years or more. When radio first commenced broadcasting in the early twenties, it was confined to the low and medium frequency ranges. However, as the number of stations increased, so did the pressures for more frequencies, and many of the non-broadcasting sectors of communications moved to the shorter wavelengths. The public broadcasters were given the medium frequencies to use.

It was not too long before the broadcasters found that the higher frequencies did provide a wider coverage of distances.

Broadcasts initially were usually confined to news and information in the local languages for tourists and expatriates abroad. However, as the international situation worsened, they then commenced programming in other languages, and presenting their points of view for the people of other nationalities.

It was Dr. Joseph Goebbels who developed radio broadcasting into a new and powerful weapon of war. It was the birth of propaganda in radio. The outbreak of hostilities led to the increase of short-wave broadcasting. A radio war broke out between the combatants, with claims and counter claims bouncing off the ionosphere, and it was hard to discern the truth for those, particularly in neutral countries.

With industry geared up for the war effort, radio and electronic technology made significant advances, especially in the field of higher powered transmitters and directional antenna systems to service a wider and diverse area and audience.

With the cessation of hostilities in 1945, short-wave broadcasting had not abated, as the international situation had altered the maps of Europe and Asia. New powers had emerged with their ideologies, as radio was extensively utilized in the period known as the Cold War. Nations commenced to jam programmes emanating from other lands as tensions increased. In many countries, broadcasting became a State Monopoly, an arm of government, conforming to its needs and directions. Hence there arose a need for independent sources of information and entertainment.

*A Call to all
holders of a*

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As many colonial powers divested themselves of their possessions and territories in the fifties and sixties, a new voice—the voice of the Third World was heard.

Today, broadcasting via short-wave is still very active. Whereas 40 years ago there were perhaps a dozen or so organizations, there are hundreds of stations active today with a multiplicity of programmes.

In next month's column we will discuss what is required for those wishing to take this activity, or to further their knowledge.

AMATEUR OPERATOR'S HANDBOOK — 1978

MAGPUBS

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BE WITHOUT ONE.**

QSP

GEMFIELDS RADIO GROUP

The Centenary Certificate draw for the cut Sapphire organised by the Gemfields Radio Group was won by John Martin VK4NOP.

SAFETY FIRST

To drive a nail without smashing your finger, hold the hammer with both hands or have your XYL hold the nail.

If people talked about only what they understood, the silence would be bearable.

Loss an hour in the morning and you will be looking for it the rest of the day.

—ARNS Bulletin, January 1980.

PROPHECY?

A voice said unto me "Smile and be happy, things could be worse".

So I smiled and was happy, and behold, things did get worse.

CAN YOU HELP?

At a recent "Workshops" conference held by the VK4 Division, a motion was passed that the WIA promote a series of articles on the subject of digital techniques, particularly in relation to transceivers.

The publications committee would be most pleased to publish such a series, and we now appeal to our literary members to contact the editor if you can be of assistance in this regard.

RFI

According to N4XX's column in CQ March 1980, the FCC (in the USA) received 15,825 RFI complaints in the quarter July to September 1979; lower than the 17,942 in the previous quarter, 12,065 cited a TV receiver as the victim and of these 9,891 emanated from CBers and 525 from amateurs. A disturbing statistic was 377 complaints by amateurs citing other amateurs compared with 295 in the previous quarter. "Many of these complaints relate to co-channel interference, something which a so-called "self-policing" service should be able to resolve with Commission intervention."

SAFETY STANDARDS

A Commissioner of the (USA) Consumer Product Safety Commission recently stated that a mandatory safety standard is needed for CB antennas. His concern results from the fact that about 200 people in the US are electrocuted every year while installing (or removing) CB antennas—accidentally touching HV power lines.—N4XX column in CQ March 1980.

VHF-UHF

An expanding world

Eric Jamieson, VK5LP



Forrester, S.A. 5233

VHF/UHF BEACONS

Freq.	Call Sign	Location
50.005	H44H1R	Honiarua
50.023	HH2PR	Haili
50.025	6Y5RC	Jamaica
50.035	ZB2VHF	Gibraltar
50.036	HC1JX	Quilo
50.036	FY7THF	French Guiana
50.040	WASMI	San Diego
50.045	VE6ARC	Alberta
50.050	ZS3E	South West Africa
50.055	ZL1UHF	Auckland
50.060	PY2XB	Sao Paulo
50.070	YV5ZZ	Caracas
50.070	VP9WB	Bermuda
50.080	W1AW	Connecticut
50.080	T12NA	Costa Rica
50.085	WA6JRA	Los Angeles
50.088	VE1SIX	New Brunswick
50.089	WD4CEI	North Carolina
50.100	HK6EQI	Pearl Harbour
50.104	K4EJO	Tennessee
50.105	KC4AAD	McMurdo, Antarctica
50.110	HK0AB	Salpan
50.110	ALTC	Anchorage
50.120	45TEA	Sri Lanka
50.144	KC6IN	Ponape, Caroline Is.
50.498	5B4CY	Cyprus
51.999	YJ8PV	New Hebrides
52.200	HK8VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6RTV	Perth
52.350	VK6RTU	Algoortie
52.400	VK7RNT	Launceston
52.440	VK4RTL	Townsville
52.450	VK2WI	Sydney
52.500	JA2IGY	Mie
52.500	ZL2VHM	Palmerston North
52.510	ZL2MHF	Mt. Clunie
52.800	VK6RTW	Albany
52.900	VK6RTT	Carnarvon
53.000	VK5VF	Mt. Lofty
144.010	VK2WI	Sydney
144.162	VK3RGJ	Glippland
144.400	VK4RTT	Mt. Mowbray
144.475	VK1RTA	Canberra
144.500	VK6RTW	Albany
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.800	VK5VF	Mt. Lofty
144.900	VK2RTX	Ulverstone
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.400	VK4RBB	Brisbane

No changes to the beacon list this month. The Geelong beacon VK3RGG on 52.330 MHz still awaits P. and T. approval — it seems months since I first reported the beacon awaited such approval!

SIX METRES

The 1980 autumn equinox didn't live up to various predictions of being the possible peak for cycle 21 in the southern hemisphere anyway. There have been the usual scattered contacts to various places overseas but nothing substantial.

Tony VK6BV rather sums up the situation by saying "April did not bring much in the way of DX for me. Instead of going through the month day by day, will start with the three days on which DX was worked! 5-4: JA1 and JA2 0500 to 0520Z. 12-4: JA1, JA2 0615Z on. 13-4: JA7, JA8,

JA0 0540 to 0625Z. Days on which JA activity was observed on 50 MHz were April 1, 2, 3, 5, 7, 12, 13, 14, 20, 27, 28, 29. The TV video on 49.750 was heard every day of the month except 8, 9, 10, 15 and 26.

"ZL TV video on 45.250 was observed on 4, 14, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29 and 30. Audio on 50.750 on 14-4 for 5 minutes on 14-4 at 0220Z. VK video on 46.250 heard on 14, 20 and 29, no audio at all. No European TV signals heard, or any other of note. ZL TV comes in between 0000 and 0200Z and departs between 0500 and 0700Z. VK TV never very strong, mostly about 0200Z. Northern TV on 49.750 at times so strong harmonics and rubbish can be heard right up to 52.500."

It would seem that about sums up the situation. Did hear on the grapevine that VK6GB has been having a few reasonable contacts, and still getting a few contacts on 144 MHz to JA.

John VK4ZJB has written to say liaison on 28.885 indicates XE1GE has not so far worked into VK4, so it looks as though Geoff will have to work hard now to make it there or anywhere else in VK for that matter, and his contact to Garry VK5AS is probably as far west he was able to work.

A feature of the autumn just past seems to be the lack of any substantiated reports of working between VK5 and W. There are reports from time to time of beacons, etc., being heard but nothing else. It seems the same peculiar conditions have existed this cycle as cycle 19 in 1958, when W and ZL contacted on many more occasions than W to VK. But what peculiar conditions exist which allow contacts to VK2, VK3 and VK5 from XE1GE over a period of 5 days in April, without so much as a whisper from W land. Strange indeed.

There is little doubt our inability to work on 50 MHz cost us many contacts. Look at the times Tony VK6BV, mentioned above, heard JAs on 50 MHz but not 52 MHz. The same has applied in the southern States, and what has been worked has been by sheer hard work when split frequencies are involved, especially when some odd part of a megahertz are used as with XE1GE!

From the "Geelong Newsletter" it is noted XE1GE was first heard by Peter VK3AWY on 10-4 at about 2300Z, then worked on 11-4 at 2310Z, with the best performance from the Mexican station on 14-4 when he worked VK3ASQ, VK3AQR, VK3ZZX, VK3BGI and VK3AKK. So coupled with the working of sundry VK2 and VK5 stations Geoff XE1GE should have something to remember.

FROM SMIRK

Latest SMIRK Newsletter is again stacked with information on six metre happenings in the northern hemisphere in particular. Some excerpts which might interest you include a report on the operating of Harry EI2W in Ireland, who commenced operations on 50 MHz at 1423Z on 20-10-79,

first QSO to VE1AVX, who was heard every day for two months! In about 6 months Harry had 1552 QSOs with over 600 different stations in USA, working all call areas, plus VE1, 2, 3, 4, KP4, VI and XE. Activity noted was much greater than during IGY. Highest MUF recorded was 52.750 MHz on 15-12-79. On 11-12 worked KOSFH, and KOKS, who was using 3 watts. At last count Harry had worked 43 US States probably more now! FY7AS is to QRT in June with no one to take over the station. Pity. In addition to Harry, two other Irish stations licensed to operate 50 MHz are EI6AS and EI9D. No G stations permitted to operate 6 metres, but crossband working between 6 and 10 metres has netted the G stations all W call areas, VE, Sable Is., VP9, KP4, YV4, ZB2, HC1JX.

Bill WX0O of "World Above 50 MHz" is trying to establish who holds the world distance record on 6 metres. Some job. Until something else comes along it still is held by LU3EX and JA6FR, standing since 24-3-56! Just to make the job interesting for Bill he has to contend with such things as ZB2BL working four JAs over the pole 0000 to 0030Z on 9-4-80.

WORLD-WIDE LOCATOR

A meeting of European VHF Managers was held in London on 26th and 27th April, 1980, to discuss the question of the introduction of a world-wide locator system which would allow the accurate locating of stations anywhere when distances have to be considered for record and other purposes. A form of locator has been in use in Europe for 20 years, and modified types have been suggested for and discussed at the London meeting, but the one most favoured is called the G4ANB system. Details of this system have been sent to me for the Australian area, and I propose making it available very soon for publication and look forward to your comments, so they may be relayed back to SM5AGM in Sweden, who has been making the overtures up till now. The system looks good, and could well be of great value in Region 3. More about it soon.

REGION 1 DX RECORDS

The following information will give you some idea how the operators in Region 1 (basically Europe) have fared in the distance records for VHF and UHF. It is interesting to note their lowest band being 70 MHz that Es does not feature as a mode of operation for contacts, though it does on 144 MHz. The 70 MHz distances are very short when compared with our 52 MHz but then the British Isles are not very big and it appears no other European country uses 70 MHz.

70 MHz: Tropo GM3WOJ to GU3HFN 602 km. Aurora G3OSS to GM3JFG 28-8-79 709 km. Meteor G3SPJ to GM3JFG 13/-12-78 726 km.

144 MHz: Tropo IT9KSO to 4Z4AQ 26-8-77 2168 km. Aurora G3CHN to UP2BBC 26-3-76 1915 km. Meteor GW4CQT to UW6MA 12-8-77 3099 km. Es CT1WT to OD5MR 28-6-79 3864 km. F2 (TE) 14EAT

to ZS3B 30-3-79 7788 km. EME SM7BAE to ZL1AZR 4-3-69 17525 km.

432 MHz: Tropo DK2NH to EA1CR 29-11-79 1608 km. Aurora SM5CUI to UA3ACY 9-11-75 1260 km. Meteor SK6AB to SM2AID 12-8-77 1033 km. EME 15MSH to ZL2BCG 6-10-79 18437 km.

1.3 GHz: Tropo GD2HDZ to HD9AMH 26-10-75 1131 km. EME PA0SSB to VK3AKC 22-2-75 16640 km.

2.3 GHz: Tropo G3LQR to OZ9OR 30-6-76 764 km.

3.4 GHz: Tropo DC0DA to G3LQR 29-11-79 430 km.

5.7 GHz: G3BNL to G3EZZ 23-4-73 152 km Tropo.

10 GHz: Tropo 1ZF2D to 14CHY 27-7-79 633 km.

24 GHz: Tropo HB7AKR to HB9MDN 6-10-79 177 km.

It is interesting to note from the above table that no less than seven records were established in 1979 and most have been set in the past five years. It surprises me the 432 MHz tropo record is not further. It also makes me wonder whether during the past 12 months or so when so much has been done working crossband from Europe to USA 10 to 6 metres, what lost opportunities there may have been on 144 MHz for a crossing of the Atlantic because there have been some very good Es conditions in the northern hemisphere as well as conditions produced by the high solar activity. It seems to me to be an area which should be looked at from both sides of the Atlantic during the trough of solar activity when Es should be at its best. I would not have been surprised to read of someone bridging the ocean there on 144 MHz, probably no one has been even trying when it has been so easy on 6 metres!

SIX METRES OVERSEAS

A rather interesting contact took place on 16-3-80 when Peter H44PT worked FY7AS along a path which closely followed the equator all the way for a distance of almost halfway around the world (Solomon Islands to French Guiana). The same day between 0030 and 0420Z Al KH6IAA worked into South America with contacts to PY, LU, CX, HC, TI and HK! KG6DX and KG6JS worked PY1RO around 0450Z. KH6NS has now worked all 50 US States on 6 metres, an effort of considerable achievement and is believed to be the first station outside USA to do so.

The South African stations are still active; on 9-3 ZS6LN worked K5KW cross-band, and the two beacons of ZS6LN and ZS6PW are being widely heard (but not in VK!). The ZS6LN beacon has apparently been heard in Japan, while on 13-3 ZS6LN worked SB4AZ on 50.112 at 1900Z.

10 GHz RECORD

Advice has been received from the VHF Advisory Committee confirming a 10 GHz contact between Rob VK3YFU and Geoff VK3AUX on 15-3-80 over a distance of 59.71 km or 37.10 miles, establishing a

VK3 record. Congratulations to the two participants, and hopefully this will only be the start of moves for ever increasing distances.

NEW ZEALAND

Having just returned from a month's visit to New Zealand I am full of praise for such a lovely country. Whilst the visit was not designed to be an amateur radio visit, I nevertheless took the opportunity to meet a few people. First pleasure was to renew acquaintances with Mac ZL3RK and XYL Nell, whom I had met when they visited South Australia in the sixties, and later his daughter Ailsa and son-in-law Newton Dodge, who stayed with us on their honeymoon. It was a great re-union.

This was followed by a pleasant evening spent at the QTH of Graham ZL3AAD of EME fame, and it gave me a deal of pleasure to be permitted to key his transmitter and hear my own call sign come back as echoes from the moon.

I tried to meet Bill ZL2CD in Wellington, but due to distances involved and lack of vehicles, had to be content with a couple of long phone conversations with Bill.

Moving on to Auckland I just missed the VHF Group meeting by one night, but at the home of Vaughan ZL1TGC, my counterpart in New Zealand who writes the VHF Notes for "Break-In", had the pleasure of meeting some of the ZL1 gang, including Ray ZL1TAB, Quenton ZL1BPW, Ian ZL2AOV/1 and Tim ZL1AQF. Made use of the Auckland repeater to speak to a few other operators, and managed to get QRM'd off the band by one of those people whom we have all heard about who has nothing to do than to run a powerful carrier on selected people! However, the conversation was completed via a simplex channel. It takes all kinds to make a world I guess.

Perhaps the best bit of news I can bring back from there is that the Christchurch Branch are raising the question of 600 kHz offset for their repeaters instead of the current 700 kHz at their National Conference soon. There seems to be more interest in being compatible with VK at the moment, probably helped to a degree by the big opening across the Tasman last year, which indicated the problems of non-compatibility.

Since returning on the 19th May I found I didn't miss all the good 6 metre DX, there hadn't been any in VK5 other than an occasional JA, and this despite the very high solar flux which rose from 205 to 270 in six days to 23-5, with A5 and K3, but producing no DX.

Finally, I am sorry to pass on the news that Allan Parker VK4JS of Longreach joined the ranks of Silent Keys on 27th February, 1980. I knew Allan back in the early sixties when we often had long QSOs on 6 metres when we were able to share a common interest at that time in orchards. I am indebted to Allan VK4ABP for the information, and have sent a card of condolence to Allan Parker's wife, Francis.

Since there is not much time to report, having been away from the VHF scene as well, now seems to be the time to close. I thank John VK5ZBU for finishing the June notes for me. Thought for the month: "Money doesn't talk these days — it just goes without saying."

73. The Voice in the Hills. ■

FORWARD BIAS

VK1 DIVISION

(Postal Address: WIA (ACT Division) Inc., PO Box 46, Canberra, 2600 ACT)

The VK1 Division holds a General Meeting for all members on the fourth Monday of each month at 8 p.m. at the Griffin Centre (Room 1, Ground Floor), Bunda Street, Canberra City. Hams visiting Canberra who would like to meet Territorians (or renew old friendships) are most welcome to come along.

QSL Bureau operations, book sales, and equipment (and junk) sales are regular features at each meeting and, with general business out of the way, we always co-opt the (willing?) services of an "expert panel of speakers" who seize on a topic and initiate discussion.

Meeting topics planned for 1980 and beyond are: 28th July: Test Gear: GDO, CRO, Noise Bridge, etc. 25th Aug: CW: From Pump-handle to Electronic Keyer. 25th August: CW — From Pump-handle to Electronic Keyer.

22nd Sept: Microprocessor Applications in AR. 27th October: (To be advised.) Possibly a (tame) Politician.

24th Nov.: Synthetic Music: Wine and Cheese Night. December: No meeting.

19th January: (To be advised.)

23rd February: Annual General Meeting (Elections).

HAMAD — For Sale: Universe 224-M 24-channel 10m Novice Tx/Rx, 28.480-28.595 MHz, plus helical whip antenna, \$80. Les Thurlton VK1NBK, QTHR. Ph. (062) 88 9226.

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2.08	3/4	8	3	No. 3006	\$1.45
2.16	3/4	16	3	No. 3007	\$1.45
3.08	1	8	3	No. 3010	\$1.70
3.16	1	16	3	No. 3011	\$1.70
4.08	1	8	3	No. 3014	\$1.90
4.16	1	16	3	No. 3015	\$1.90
5.08	1 1/4	8	4	No. 3018	\$2.10
5.16	1 1/4	16	4	No. 3019	\$2.10
8.10	2	10	4	No. 3907	\$3.10

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153-BA 15M 3 el yagi.....	\$120
18AVT/WBa 10-80M vertical.....	\$110
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CDE Ham 1V heavy duty (June/July).....	POA
CDE T2X Tail twister extra HD.....	\$250
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ACCESSORIES

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TS-120S 10-80M 12V solid state.....	POA
TS-700SP 2M all mode trans.....	SPOA
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TV-502 2M transverter for TS-520/TS-820.....	\$250
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SP-520 for TS-520 series.....	\$30
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The very latest 2M FM from KYOKUTO 2M FM
mobile 25W 10 memory channels plus
full scanning etc.....

	\$350
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SO-239 - 4 hole and single hole types.....	each 60c
MLS right angle RG-58U to PL-259.....	75c
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Mic. sockets 3 & 4 pin each.....	60c
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Set of 8-crystals. Converts 28.480 to 28.595 MHz
in 5-kHz steps. Clarifier tuning on Tx and Rx plus info
to re-activate 24th channel..... per set \$32

Set of 4 crystals converts 28.310-28.600 MHz.
10 and 20 KHz steps. Clarifier tuning Tx and Rx
..... per set \$15

All prices are NET, ex Springwood NSW, on pre-payment with order basis. All risk insurance is free of charge, allow for freight charges by air, road, rail or postal, excess will be refunded. Prices are subject to change without prior notice. All orders cleared on a 24-hour basis after receipt of order with payment.

ROY LOPEZ (VK2-BRL) Manager

The 1980 Federal Convention and Annual Report

The 1980 Federal Convention has come and gone. No world shattering news but steady progress towards the incorporation of amateur radio in Australia for the benefit of all operators.

What the WIA does for amateur radio is for all amateurs not for WIA members alone.

The Federal Convention, held in the Brighton Savoy Hotel in Melbourne from 25th to 27th April, came out strongly in favour of the IARU and re-affirmed support both for the IARU and the IARU Region 3 Association. Thought is being devoted to the future of this important international organisation. Equally important is the thought going into amateur radio in Australia arising from the decisions of WARC 79.

The Convention hours are long and arduous, the work is intricate and complex and not enough hours are available for rest. Is it any wonder that Federal Councillors return home dry and ready for a holiday.

All Federal Councillors and Alternates attended. Their names appear in May AR except for VK7, which was represented by Brian Morgan VK7RR and Reg Emmett VK7KK, Fred Parker VK2NFF in place of Phil Card VK2ZJ and John Alkinson VK2YF attending as an additional Alternate Councillor. The Federal President, David Wardlaw VK3ADW chaired this meeting—his eighth since the 1974 Convention. Executive members attending full time were Peter Wolfenden VK3ZPA, Executive Vice-President and elected Federal President during the Convention, Ken Seddon VK3AGS and Courtney Scott VK3CB were both re-elected. Harold Hepburn VK3QF was absent overseas but also was re-elected, as well as Bruce Bathols VK3UB, Editor of AR.

Visitors who attended the Convention relating to their own portfolios also included Keith Malcolm VK3ZYK, Chairman of the VHFAC (see last month's WIA NEWS).

AMATEUR RADIO

Your own magazine, AR, came in for a good share of the discussions, mainly because of rising costs. Motions were passed that publication must continue, that an AR Publicity Office be appointed in each Division to obtain advertising and articles for publication and that Divisions be strongly encouraged to incorporate Divisional Bulletins into the printed pages of AR. A suggestion was made that only 11 issues be published each year with the Call Book making the 12th issue. This was overtaken by a motion calling on the Executive to examine the feasibility of posting the Call Book to each member each year. As this could not occur until 1981, the motion added that any increase in fees to cover this must be considered and finalised by 15th August next before the 1981 Budget comes up for review.

Adding Divisional news into AR increases costs which would be reimbursed by Divisions partly or wholly by offsetting present insertion costs and saving regard to the amount of space used. It was generally felt that good Divisional news items would be of interest to readers in other States.

AR will be produced web offset from this issue to hold costs. This is obviously the first of many proposed changes in the pipe-line which will be noticed when the new system gets into its stride.

EDUCATION AIDS

Last year it was thought that the production of original material for educational purposes from the money received from the Dick Smith donation was finalised. However, upon reflection during the year, the question was asked if the end result would be acceptable. As the result of a much closer examination of precisely what would be involved the Convention came to the conclusion that costs would be well in excess of the amount available if a worthwhile quality production were to be achieved. It was finally decided that the money should be split equally amongst the Divisions to be spent on educational material and that each Division report not later than 31st October on how they have applied their shares or how they intend to use them.

On the question of examinations it was decided to ask the Department to grant permanent morse exemptions to Novices who obtain a pass at 10 words per minute in an exam. Concern was expressed over delays in issuing exam results as well as the issue of licences in some States. The recognition of examinations conducted by other competent bodies, e.g. Technical Colleges, was also to be pursued as in the past.

TV CHANNELS 0 AND 5A

This remains of major concern. A motion was passed expressing a clear policy. The concept of Independent Multi-Cultural Broadcasting is not a matter which concerns the Institute, but the continuing use of Channel 0 and 5A is a matter of concern and must continue to be opposed by all means at our disposal. This extends to encouraging all amateurs to petition their local Federal Parliamentary members to express concern at the continuing use of TV Channels 0 and 5A. The message is plain. The Institute opposes the use of Channels 0 and 5A for television broadcasting by anybody.

AMATEUR ADVISORY COMMITTEES

The status quo is maintained. The Institute continues to support Amateur Advisory Committees. Work requires to be done on the terms of reference. The establishment of local P. and T./WIA Joint Committees at State level is to be encouraged.

BAND PLANS

The Convention re-affirmed the existing policy that established VHF and UHF band plans be adhered to by all. The "gentlemen's agreement" relating to the HF bands (i.e. CW only in one specified segment and all permitted modes elsewhere in each band) are seen as essential and all amateurs are to be asked to respect these segments so as to avoid chaos.

This also came up in discussions on extending the 80 metre Novice segment down to 3500 KHz. This was rejected. An amending motion to seek an extension down to 3515 KHz instead also resulted in no decision at the Convention—three Divisions for, three against and one abstaining. The abstention could result in a yes or no vote within 30 days. As it later turned out that vote is in the negative and no downward extension is to be sought.

A 70 cm band plan was adopted as a guideline in the FM section of that band. RTTY spot frequencies are to be re-checked.

Publication on all these band plans will be following in future issues of AR.

The IARU is to be approached in relation to gentlemen's agreements for all the new proposed HF amateur bands incorporating all applicable modes in a manner similar to those of existing HF amateur bands. Also that agreements should be negotiated regarding power limitations in the new proposed 10 MHz band.

GENERAL

The Institute is to approach the P. and T. Department for the early use of the new proposed HF bands at 10, 18 and 24 MHz as well as seeking alternative channels in the 500 to 900 MHz region, approximately, for ATV if the present 50 cm temporary allocation is withdrawn.

An alternative membership badge based on the international diamond style of badge is to be designed. This badge does not in any way supplant the existing WIA badge.

A motion was carried that adequate justification for a common band being made available to all amateur licensees had not been established at the Convention.

It was agreed that there should be primary and secondary WICEN frequencies on bands above 14 MHz. The exact frequencies are to be determined later. The requirement that amateurs must state on licence application forms the equipment to be used was seen as undesirable and a motion to this effect was passed. Also the Department is to be asked to grant permanent exemptions in the CW exam to those Novices who pass the 10 w.p.m.

tests. In reviewing the examinations field, concern was expressed over delays in issuing results and delays in issuing licences in some States, where "over the counter" licensing does not yet operate. It was also agreed not to ask for copies of the exam papers and to continue work on other responsible organisations (such as Technical Colleges) conducting end of the year amateur exams on behalf of the Department. The principles affecting Divisional examinations were discussed, as well as the implications which could arise if the CW portion of the 80m band were to be extended to 3540 KHz in place of the present 3535 KHz. An investigation is to be carried out to prepare a case to be put to the Department for an allocation in the 80 or 40m Amateur phone band segment.

ORGANISATIONAL

The possibility of appointing a voluntary Press Agent was discussed with the view to taking advantage of potential space in local newspapers (etc.) to promote amateur radio. Further enquiries are being made and comments are welcome.

Ongoing publicity and recruitment measures were reviewed. It was noted that the A to Z leaflet is available, selective advertising is carried out and some Divisions (VK4 and VK5) had prepared handouts. Long term plans for amateur radio in Australia were discussed with the result that the VK1 and VK4 Federal Councillors would be glad to receive comments so as to prepare a paper on the subject. A motion was passed that pensioners' Federal dues should be the same as for Full and Associate members. A new form of membership application was agreed upon for universal use in all Divisions.

The Federal Constitution was examined and it was agreed to seek amendment on the lines that the Editor of AR need not be a member of the Executive but should be appointed by the Executive as well as the Publications Committee. It was also agreed to delete the requirement that AR be issued monthly. A very long standing policy that the Executive must be located in the same city as the Central Office of the P. and T. Department was set aside. The grounds that if Central Office shifts to Canberra it would become extremely difficult for the necessary number of volunteers to be found for both Federal and VK1 Divisional functions.

After discussions it was agreed that Magnums shall not handle subscriptions to overseas magazines on behalf of members, except for Break-In and VHF Communications. Magnums would continue to handle books and WIA items. The Executive were asked to investigate and identify the need for additional office facilities and personnel.

The next Convention was set down for 2nd to 4th May, 1981, at the same place. A number of agenda items were withdrawn on the grounds mainly that the matters were already WIA policies and were ongoing or had already been done.

ANNUAL REPORTS

Each Annual Report was presented and discussed in great detail. There is much material in these reports of general interest and as they will form part of the official Convention Minutes (as well as having been previously circulated to Divisions) can be read on application to your Federal Councillor. One of the problems with Contests was the apparent indifference of amateurs to make useful comments on aspects they did not like when rules were published. Some feedback came after the contest which was valuable, in fact the complaint about the indifference of amateurs to make comments in advance of any proposed changes could be carried through to many other subjects.

During the Convention a most pleasing presentation ceremony was undertaken by Alex McDonald on behalf of all delegates. Dr. and Mrs. David Wardlaw and Mr. and Mrs. Michael Owen were presented with mementos (chosen secretly beforehand by the wives whose contributions in aid of their husbands was clearly to be recognised) for work on behalf of amateur radio before and at WARC 79. Another presentation was the handing over by VK1 to VK5 of the coveted RD Trophy.

EXECUTIVE REPORT 1979-80

THE EXECUTIVE

1. As in the past, the Executive through the Executive office has continued to produce WIANews and the Federal tapes in order to give up to date news of Federal happenings within the WIA and also international items of interest. By this means there has been a continuous report from the Executive throughout the year.

2. The Executive for the year 1979/80 was elected as follows:

David Wardlaw VK3ADW	President, Chairman
Peter Wolfenden VK3ZPA	Executive Vice Chairman
	Vice President
Courtesy Scott VK3BNG	Hon. Treasurer
	Chairman Finance Sub-Committee
Ken Seddon VK3ACS	Chairman Federal Repeater Sub-Committee
Harold Hepburn VK3AFQ	Nominal Editor
John Bennett VK3ZA	

3. We welcomed a new Executive member this year — Courtney Scott VK3BNG. Courtney in taking over the Treasurer's job has been a very valuable member of Executive, bringing to us his expertise in the financial field.

4. We also have Harold Hepburn back again on Executive. When he was last on Executive, Harold was concerned with the previous revision of the "Handbook" and has become deeply involved in the negotiations with the Department on this again during the current revision.

5. With my own involvement as a member of the Australian Preparatory Group for WARC 79 and as a member of the Australian Delegation to WARC 79, Peter Wolfenden as Executive Vice Chairman has had to carry much of the day to day load and has done so in an admirable manner.

6. Ken Seddon has continued to hold office as Chairman of the Federal Repeater Sub-Committee.

7. John Bennett, the last member of Executive, provides us with expertise in the publicity and PR areas.

8. I must mention the two members of the previous Executive who retired:

Graeme Scott VK3ZR who has contributed so much in the education field.

Keith Roget VK3QV. We were all deeply shocked to learn of Keith's sudden death at Port Vila in the New Hebrides in February of this year. Keith was one of the hardest working and loyal members that the Institute has ever had and his influence will be felt for many years.

9. Attendances for the first 11 meetings since the last Convention were —

Dr. D. Wardlaw	9
Mr. H. L. Hepburn	8
Mr. C. D. H. Scott	10
Mr. K. C. Seddon	11
Mr. P. A. Wolfenden	11
Li. Col. J. McLennan	4

The following also attended —

Mr. G. F. Scott	1
Mr. B. Bathols	9
Mr. K. Malcolm	4
Mr. T. Pitman	3
VK3JY	1
VK3ZXW	1
VK3YFA	1
VK3BDM	1
Mr. M. Stephenson	7
Mr. P. B. Dodd	11

OFFICE

10. Our Landlord at 517 Toorak Road, The Commonwealth Bank, gave indications early in the year that it was hoping to rebuild and as a consequence would only accept a monthly tenancy. Although we had not been given any order to vacate we initiated a search for alternative accommodation.

11. Suitable premises were found in Hawthorn Road, Caulfield North. We moved the office to these new premises on the 29th November.

12. The office space at Hawthorn Road is only slightly larger than the space at Toorak Road but

the configuration is markedly superior which is a great advantage particularly as there is now greater involvement of the office in the preparation of "Amateur Radio" Magazine.

STAFF

13. A decision of the 1979 Convention was to add a full-time member to the Federal office staff of the WIA to handle "Amateur Radio" magazine matters. His job would be to take over the work of the part-time employee doing AR advertising, who would be no longer needed, and to relieve the Editor of the job of pasting up AR.

14. Mark Stephenson VK3NOY was employed on a provisional basis and having satisfactorily completed his probationary period he has been employed on a permanent basis.

15. Peter Dodd in his role of Secretary Manager has been of constant assistance to the members of the Executive and various appointed officers.

MEMBERSHIP

16. Again this year it is very pleasing to report a significant increase in membership.

17. It is to be hoped that this growth of the WIA will be maintained in the post WARC period as strong representation of the Amateur Service by a strong WIA will continue to be needed, particularly to obtain speedy implementation of the decisions of WARC 79 in Australia amongst other things.

WARC 79

18. The preparation for WARC 79 continued throughout the year with myself, David Wardlaw VK3ADW, and Michael Owen VK3KI attending all the Preparatory Group meetings, culminating in our appointment as Australian Delegates to WARC 79.

19. Appended as Report 80.04.01A is a comprehensive report of the Conference and results. Sufficient to say in this part of the report that the Amateur Service obtained many of its goals at the Conference but not without difficulties and due to no uncertain measure to the extensive preparation put in beforehand.

20. The most important single factor was the Amateur participation in the Special Preparatory meeting of the CCIR held one year before the Conference. I was extensively involved in the preparation for WARC in Australia which took up a major part of my time.

21. As there is a question in CCIR Study Group 8 concerning the Amateur Service, the WIA will participate in National Study Group 8L.

22. During the year, donations to WARC finances continued to be received and it looks as if we will be very close to our goal.

IARU

23. The WIA must continue to support the IARU both world-wide and through the Region 3 Association. Careful thought will have to be given to the implications of any suggestions made by overseas societies with regard to the future of the IARU alongside our own thoughts on the matter. This is important as an effective IARU is needed to ensure that Amateur Radio becomes as widespread and unfettered as possible in the newly developing countries.

VHF TV FREQUENCIES

24. The move of ATV from Channel 0 to Channel 10 was good news for Melbourne 6 metre operators.

25. However, this was negated by the announcement that "Ethnic" TV would use the vacated channel 0 when it commences in October 1980; this service to run in parallel with the one on UHF as was originally announced.

26. Our immediate protests were forwarded to the Minister for Post & Telecommunications by the Federal President asking why there had been a change in the plans for Ethnic TV from his earlier announcement. So far no reply has been forthcoming and, consequently, reminder has been forwarded to the Minister. It is understood that this assignment will also apply in Sydney.

27. Members and Divisions, particularly Victoria and NSW, were asked to make their views known. Some have received replies, unlike the Federal body, indicating that this is only a temporary assignment and will be terminated eventually leaving UHF. However, it was pointed out that despite its known shortcomings the Minister and his advisers consider 0 as a useful TV channel.

28. As has been the case ever since the introduction of TV in Australia, the number and allocation of TV channels has been a political issue. Anyone who has studied the facts going back prior to 1950, when TV was introduced in Australia, will have no difficulty in seeing the piecemeal way the matter was dealt with; showing little concern for other users — particularly the Amateurs. This has disadvantaged the Australian Amateur VHF operator when compared with his counterpart in other developed countries. It has also involved the WIA in endless discussions and negotiations.

29. In his reply to our report on the increasing use of Channel 5A, the Minister for P. & T. alluded to the complexity of the matter but said that no further allocations of Channel 5A would be made until a detailed report is prepared following WARC 79, although where projects were well advanced it would be difficult to change the channel and we could expect a number of 5A stations to come into operation over the next 12-18 months. At WARC 79 the Australian footnote 279A was modified to read "in Australia the band 137-144 MHz is also allocated to the Broadcasting Service for television until the service can be accommodated within the regional broadcasting allocation".

30. Also, the world-wide Aeronautical Mobile (R) band has been extended up to 137 MHz the lower limit of Channel 5A.

31. For many years the WIA has advocated that in areas where there is no Channel 5 transmitting licence be granted for the use of the frequency band 50-52 MHz by Amateurs as this is allocated in other countries in R2 and R3 in the international table and sometimes the MUF reaches 50 MHz but not 52 MHz.

32. There now seems to be the possibility of the segment 50.00 to 50.15 MHz being made available for use by the Amateur Service outside TV hours.

AMATEUR HANDBOOK

33. Following last year's Convention, as a result of attention by the Minister, the WIA was given further opportunity to comment on the draft "Handbook". Many of the WIA suggestions have been accepted but others were of course unable to succeed because of the nature of the regulations governing the Amateur Service.

34. The Department has stated that this re-write of the Handbook is only an interim measure until the new legislation is enacted by Parliament. This legislation still appears to be some way off.

35. The WIA has repeatedly made the point that if any specialised information is in the Handbook, such as repeater conditions, then this material should not be the subject of examinations. The Department has agreed to this and I hope some indication will be given in the finally printed Handbook as to which material will not be examined on.

JOINT COMMITTEE

36. The Federal Joint Committee of WIA and P. & T. Department met on three occasions during the year. Although many matters were discussed the main themes during the year were the Handbook and matters concerned with examinations. It had been hoped that firm decisions and agreements would come out of these meetings. We are disappointed to a large extent that this has not happened. This is not to say these meetings are not useful but not as decisive as we had hoped.

37. Negotiations with the Department over repeater conditions have at last been concluded with the mutual agreement of both parties to them all. These negotiations were protracted but show the value of insistence on close examination of unrealistic clauses in order to obtain a satisfactory alternative.

38. In response to our request for F5 on bands above 1 GHz, we should be granted permission to operate in this mode between 1240-1300 MHz on a trial basis.

39. Reciprocal licensing has been discussed with the Department in an attempt to increase the number of countries with which we have reciprocal agreements. This is necessary as few countries have the twelve month visitor's permit such as Australia and a reciprocal agreement is necessary for Australia to obtain permission to operate overseas. Japan is one country of particular interest and it looks as if there may be a breakthrough.

EDUCATION AND EXAMS

40. In the education field the AOCIP syllabus has now been agreed on, with a change to multi choice questions. As a result of this change the Department feels that it is impossible to issue copies of past examinations using this format. However, a sample paper of 50 questions has been promulgated and will appear in the new Handbook.

41. The WIA has made a number of suggestions in the examination area which have been acted upon; for example, the carrying of a pass in more sending which will save a considerable amount of examination time. There also has been an increased facility for examination in remote areas.

42. It is disappointing that not much progress has been made in the production of educational material as decided on at the last Convention.

Project Asert

43. This worthwhile project continues to flourish and during the year the purchase of further recorders was authorised. It is projects such as this that do much to enhance the image of Amateur Radio.

VIDEOTAPES

44. The WIA Videotape service under the care of Coordinator John Ingham VK5KG has continued to expand.

"AMATEUR RADIO"

45. Thanks must go to Bruce Bathols VK3UV and the Magazine Committee, for maintaining the quality of "Amateur Radio".

46. With Mark Stephenson taking over the routine production work, which is now carried out in the Federal office, much of the load has been taken from the shoulders of the Editor.

47. Early in the year rapidly escalating costs hit AR necessitating prompt action and close monitoring. With a slight reduction in paper quality the printer agreed to hold his charges constant until December. The change in paper was well received by the members. During the year there has been a marked drop in advertising which is causing us concern. Consideration is being given to going to Web Offset printing which could continue to hold our printing costs at a reasonable level. Unfortunately, we have still had some problems with the mailing service on the insertion of Divisional Bulletins.

48. Callbook. The call sign listings in the 1979 callbook were typeset, using our computer file, by an organisation that specialises in this type of operation. This was a vast improvement compared with the listings taken directly from the Monash printout. 10,000 copies were printed and not a great number are left. It is intended to publish a further edition this year in a more basic form and of a limited printing.

Magpups continues to augment our funds.

49. WICEN. At the Federal level WICEN has made steady progress throughout the year having reached a state of acceptance with the Amateur community and many disaster control agencies. This has been achieved as a result of call outs for bush fires, standbys for cyclones, standbys because of breakdown of Telecom communications during industrial unrest, simulated exercises, and also by regular columns in AR and liaison at State and Regional levels.

50. Intruder Watch. At the end of 1979 Alf Chandler retired as Federal Intruder Watch Co-ordinator. Alf has been the backbone of Intruder Watch in Australia for many years. Our thanks must go to him for his service to the Institute in this field. Alf continues to serve Intruder watching as R3 Intruder Watch Co-ordinator. Alf's successor is Graeme Fuller VK3XNI.

Sometimes because of the lack of results the effectiveness of Intruder Watch is questioned. However, if we do not complain at all we are leaving ourselves open to hordes of intruders who would claim they are causing no harmful interference.

51. QSL Bureau. Ray Jones VK3JR has retired from the position of Federal QSL Manager after 50 years of service. It would like to pay tribute to Ray's service to the WIA and to thank him on behalf of the members.

This year there has been a marked increase in the number of cards handled with a 10% increase in handling the cost of 100 cards.

52. Non-ionising radiation hazards. The Standards Association of Australia has set up Committee T2/1/2 to study non-ionising radiation hazards. The WIA is being represented by Jim Lloyd VK1CDR who also represents the Australian Radiation Society and the Department of Defence. Jim is well qualified to look after the interest of amateurs. Ken Seddon continues to represent us on SAA Committee 1454 — Siting of Radio Communications Equipment. He has been assured that none of the restrictions will apply to Radio amateurs.

53. YHFAAC. The YHFAAC under its new Chairman Keith Malcolm VK3ZYK has provided strong support for the Executive throughout the year. This was especially welcome on the matter of Channels 0 and 5A.

Membership Statistics

54. These were compiled on the same basis as for previous years. Please note that P. & T. Dept. statistics refer to licences issued whereas the WIA statistics refer to the number of individual members. A short tabulation shows the number of second members held by members. The statistics at 31.12.1979 (previous years in brackets).

55. In conclusion I would like to thank all those officers of the Institute who gave so readily of their time. Their help was especially appreciated this year with my heavy involvement with WARC 79. On this account please exercise tolerance if I have accidentally omitted mention of any subject which others believe ought to have been mentioned.

(Sgd.) D. A. WARDLAW VK3ADW
Federal President

WORLD ADMINISTRATIVE RADIO CONFERENCE
GENEVA 1979

REPORT BY AMATEUR DELEGATES

1. Dr. D. A. Wardlaw and Mr. M. J. Owen were members of the Australian delegation to the World Administrative Radio Conference Geneva 1979 representing the Amateur Service and nominated and funded by the Wireless Institute of Australia.

2. This report annexes an article by Mr. Owen published in Amateur Radio (March 1980) and extracts from the IARL publication "BEST" as well as extracts from the current radio Regulations of the ITU and extracts from the Final Acts of the World Administrative Radio Conference which together enable the new provisions affecting the Amateur Service to be fully understood. By this means considerable unnecessary work is avoided and hopefully a more useful report may be presented.

3. This part of the total report therefore deals with matters that are not otherwise covered.

4. Mr. Owen arrived in Geneva on September 20th and Dr. Wardlaw arrived in Geneva on September 23rd. The Conference was scheduled to finish on Friday, November 30th, but in fact the Final Acts were not signed until the evening of Thursday, December 6th. In these circumstances Dr. Wardlaw adhered to his previous schedule and left Geneva on Saturday, December 1st, whilst Mr. Owen remained to attend the Final Plenary meetings.

5. As Mr. Owen was accompanied by his family and had a larger apartment, he was able to undertake more entertaining than Dr. Wardlaw and thus expended more of the entertainment allowance granted by the Institute than Dr. Wardlaw. Dr. Wardlaw accordingly transferred 1,000 Swiss francs from his allowance to Mr. Owen and thus funds sufficient to cover his extended stay were made available. Neither Dr. Wardlaw nor Mr. Owen claimed any additional reimbursements over the amounts already advanced by the Institute.

6. The general report published in Amateur Radio outlines the options facing the Australian Administration in relation to the new HF bands to be allocated to the Amateur Service. We believe strongly that we should press for the widest allocation as early a date as possible. Whilst, because of its secondary status, the band at 10 MHz is not subject to a transitional procedure, the other two bands are. Logically we can expect the 10 MHz band to become available first. Given the inevitable congestion that will arise in that very small segment we believe it is imperative that we should press for the other two bands to be made available on an experimental basis outside the

transition period on the basis of existing Regulation 115. We do not believe we should be fearful of overcrowding these new bands. We argued at the SPM and at the WARC that there was now and in the future there would be congestion in Amateur bands but that an enlarged family of frequencies would reduce congestion in the most spectrum economic way as it would enable Amateurs to select frequencies most appropriate for particular paths at particular times and different seasons and different parts of the sun spot cycle. Not only would any artificial rationing be inconsistent with that argument, it would also, in respect of the 10 MHz segment, remove pressure to not allocate fixed services in that band. Further, we argued that 50 kHz was not enough. There will be a next time around. By then let us be able to point to the great use being made of all Amateur radio.

7. We particularly wish to acknowledge the very close relationship that existed between Mr. Fred Johnson, the New Zealand delegation's Amateur representative nominated by NZART and the other members of the New Zealand delegation.

8. In submitting this report we would like to record our appreciation to the WIA and its Federal Council for the trust that has been reposed in us. We can assure you that we have always been very conscious of the heavy responsibilities we would also like to record our thanks to the leader of the Australian delegation, Mr. E. J. Wilkinson, and all of the members of the delegation. We may have been "Amateurs" but we were never made to anything other than full members of the delegation and were able to participate in many matters that were not of an immediate interest to the Amateur Service, though many will have an indirect influence on the specific interest we were representing. Finally, we would like to thank those individuals, clubs and groups, who very often quietly and personally have wished us well and assured us of their personal support. We may not have thanked everyone who did this but we can assure you that we have appreciated this thoughtfulness.

(Sgd.) D. A. Wardlaw
(Sgd.) Michael J. Owen

25th March, 1980.

THE WIRELESS INSTITUTE OF AUSTRALIA
A COMPANY LIMITED BY GUARANTEE
INCORPORATED IN VICTORIA UNDER THE
COMPANIES ACT 1961

In accordance with the Companies Act, 1961, the Executive state the following:—

- (a) The names of the Executives in office at the date of this report are:—
Dr. D. A. Wardlaw VK3ADW
Mr. P. A. Wolfenden VK3ZPA
Mr. K. C. Seddon VK3JACS
Mr. C. D. H. Scott VK3BNG
Lt. Col. J. McL. Bennett VK3ZKA
Mr. H. L. Hepburn VK3AFQ
- (b) The principal activity of the Wireless Institute of Australia is:—
 1. Represent generally the views of persons connected with Amateur Radio in the Commonwealth of Australia, its territories and dependencies.
 2. Promote the co-operation between the Divisions in the encouragement and development of amateur radio.
 3. Safeguard the interest of the Divisions and the members in relation to frequency allocations, rights and privileges.
 4. Promote the development, progress and advancement of amateur radio in all matters in relation to amateur radio in general.
- (c) The surplus of income over expenditure for the year ended 31st December, 1979, was \$4,734 compared with \$6,821 for 1978. There is no provision for income tax required as the Company is exempt under Section 103A(2) of the Income Tax Assessment Act.
- (d) During the year provisions were increased:—
 1. Provisions for holiday and long service leave was increased by \$1,692 to \$5,192.
 2. Provision for Superannuation — Increased by \$1,000 and interest received \$227 to \$5,879.
- (e) The Executive has taken reasonable steps, before the Statement of Income and Expenditure and Balance Sheet were made out, to ascertain

that action had been taken in relation to the writing off of bad debts an making of provision for doubtful debts and to cause all known bad debts to be written off and adequate provision to be made for doubtful debts.

- (f) At the date of this report the Executive is not aware of any circumstances which would render the amount written off for bad debts, or the amount of the provision for doubtful debts, inadequate to any substantial extent.
- (g) At the date of this report the Executive is not aware of any circumstances which would render the values attributed to current assets in the accounts misleading.
- (h) At the date of this report no charges exist on the assets of the Institute which have arisen since the end of the financial year and do not secure the liabilities of any other person.
- (i) There does not exist any contingent liability which has arisen since the end of the financial year.
- (j) No contingent liability or any other liability has become enforceable within the period of twelve months after the end of the financial year which in the opinion of the Executive will or may affect the ability of the Institute to meet its obligations when they fall due.
- (k) Since the end of the previous financial year the Executive has not received or become entitled to receive a benefit by reason of a contract made by the Institute or a related corporation with the Executive or with firms of which they are members or with companies in which they have substantial financial interests.
- (l) The results of the Institute's operations during the financial year were in the opinion of the Executive not substantially affected by any item, transaction or event of a material and unusual nature. There has not arisen in the interval between the end of the financial year and the date of the report any item, transaction or event of a material and unusual nature likely, in the opinion of the Executive, to affect substantially the results of the Institute's operations for the next succeeding financial year.

Dated at Melbourne this 24th day of March, 1980.

MEMBERS OF THE EXECUTIVE

(Sgd.) C. D. H. SCOTT
(Sgd.) K. C. SEDDON

STATEMENT OF INCOME & EXPENDITURE

	1979	1978
Income:		
Members' Subscriptions	\$97,096	\$81,936
Interest Received	5,138	5,074
Surplus — Magpups	7,065	8,426
— Call books	13,686	—
Donations — ASJA Award	75	—
— Other	6	—
Expenditure:		
Amateur Radio (Note 1)	58,517	33,445
Audit Fees — 1978	578	489
— 1979	700	—
Bank Charges	381	685
Catering and Entertainment	—	122
Committee Expenses	1,011	524
Convention Expenses	4,330	2,492
Depreciation	534	340
EDP Expenses	3,300	4,734
Electricity and Power	524	370
General Expenses	749	542
Holiday Pay and LSL Provision	1,692	—
Insurances	757	540
Membership Recruiting	3,023	2,568
Provision for Amateur Satellites	—	3,000
Postage & Freight	4,205	3,362
Rent and Rates	3,317	2,230
Repairs and Maintenance	228	167
Superannuation	1,000	1,000
Stationery and Printing	2,799	4,545
Salaries and Secretarial	29,658	26,448
Telephone	851	684
Travelling Expenses	182	128
	118,326	88,615
Net Surplus	4,734	6,821
Accumulated Funds Brought Forward	33,100	26,279
Accumulated Funds Carried Forward	\$37,834	\$33,100

TABLE 1

	Total Licences	WIA Licensees	% members to total licensees	Other WIA members	Total WIA members
VK1	280 (229)	157 (123)	56 (53)	60 (53)	217 (176)
VK2	4091 (3633)	1841 (1530)	45 (42)	246 (243)	2087 (1773)
VK3	3639 (2941)	1747 (1417)	48 (48)	367 (442)	2114 (1859)
VK4	1726 (1334)	944 (757)	55 (56)	157 (209)	1103 (966)
VK5/8	1528 (1296)	854 (690)	56 (53)	226 (265)	1080 (955)
VK6	914 (807)	488 (409)	53 (50)	107 (111)	595 (529)
VK7	384 (328)	256 (212)	67 (64)	62 (75)	318 (287)
Other	34 (19)	— (—)	— (—)	— (—)	— (—)
Totals	12596 (10587)	6287 (5138)*	50 (48)	1227 (1398)	7514 (6536)

Net gain = 978.

% increase in total licences 19% (2009).

% increase in licensed WIA members 22% (1149).

*TABLE 2. Total number of double calls in WIA member lists:

VK1	2
VK2	88
VK3	81
VK4	39
VK5	26
VK6	18
VK7	8
	260

Add 260 to 6287 = 6547
6547 = 52% of total licences

TABLE 3. Total licences by grades:

	Full	Limited	Novice	Total
VK1	171 (157)	45 (43)	64 (29)	280
VK2	2129 (2006)	943 (897)	1019 (730)	4091
VK3	1630 (1506)	1132 (980)	877 (455)	3639
VK4	741 (639)	459 (391)	526 (304)	1726
VK5/8	729 (667)	369 (321)	430 (305)	1528
VK6	496 (452)	221 (207)	194 (148)	914
VK7	158 (184)	100 (94)	86 (50)	384
Others	32	1	1	34
Totals	6126 (5611)	3273 (2933)	3197 (2024)	12596 (104587)

TABLE 4. WIA members by grade:

	F/C	A/T	S (Student)	G (Pens.)	L (Life)	X (Fam.)	Other	Total
VK1	155	60	—	—	1	—	—	216
VK2	1628	219	72	151	12	5	—	2087
VK3	1545	320	88	136	7	6	1	2103
VK4	887	148	4	45	4	5	10	1103
VK5/8	770	197	31	70	5	7	—	1080
VK6	440	96	17	37	4	1	—	595
VK7	238	58	5	9	4	4	—	318
Fed.	—	—	—	—	12	—	—	12
	5663	1098	217	448	49	28	11	7514

TABLE 5. Discontinuance of membership:

An examination of the EDP records for 1979 showed that 592 members listings were removed and these have been analysed as follows:	Resignations — Recorded on receipt of letter or returned subs. notice. Many reasons given — lack of funds, going overseas, no longer requires AR, etc.
Deceased 39	Deletions — Almost wholly because of being unfinancial. These listings also include deletion of the double record when full call obtained, i.e., obtaining full call after holding both Limited and novice calls (in this case the "X" record only is deleted — the other is amended). The same applies if a member holding two call signs resigns or dies.
Resignations 40	
Deletions —	
— in year after joining	44
— in 2nd year after joining	149
— in 3rd year after joining	140
— 4/5 years after joining	73
— 6/8 years after joining	48
— over 9 years after joining	59

BALANCE SHEET AS AT 31ST DECEMBER, 1979.

	1979	1978
Members' Funds:		
Accumulated Funds	\$37,834	\$33,100
Special Funds — ITU/WARC		
(Note 2)	533	14,737
IARU (Note 3)	842	390
RWAA (Note 4)	1,213	1,153
	\$40,422	\$49,380
Represented by:		
Current Assets:		
Commonwealth Bank — General Account	\$14,521	\$41,260
Commonwealth Savings Investments	2,104	25,233
Australian Savings Bonds	42,100	23,100
Australian Resources Development Bank	2,200	2,200
Sundry Debtors — Less Provision for Doubtful Debts (\$2,000)	18,264	12,572
Stock on Hand — at Cost	4,714	4,276
Non-Current Assets:		
Furniture and Fittings — at Cost		
Less Provision for Depreciation (\$874)	1,788	1,955
Deduct Current Liabilities		
Sundry Creditors	1,603	2,468
Subscriptions in Advance	25,833	42,437
Provision for Superannuation	5,879	4,652
Provision for Amateur Satellites	2,972	4,349
Provision for Holidays and Long Service Leave	5,192	3,500
Deposit VK4	300	300
Dick Smith Education Fund	3,500	3,500
	45,279	61,208
	\$40,422	\$49,380

NOTES TO AND FORMING PART OF THE ACCOUNTS

AMATEUR RADIO (Note 1)

	1979	1978
Income:		
Advertising	\$32,198	\$37,756
Subscriptions and Sales	1,719	2,742
Inserts and Sundries	2,946	4,346
	36,863	44,844
Expenditure:		
Awards	60	90
Honoraria	4,400	4,540
Postage	13,555	10,099
Publishing, Printing and Distribution Costs	68,095	54,919
Salaries	7,941	7,778
Travelling Expenses	1,299	863
	95,390	78,289

Excess Expenditure Transferred to General Account Representing Cost of AR to Members	\$58,517	\$33,445
Special Funds — ITU/WARC (Note 2)	\$3,062	\$9,521
Balance 1.1.79 — ITU Fund	\$3,062	\$9,521
— WARC Fund	10,894	9,604
— WARC — Public Donations	781	—

	14,737	19,125
Add Interest	749	1,699
Members Contributions	5,049	—
Public Donations	4,330	781
Members Donations	—	573
	24,865	22,178
Less Expended	24,332	7,441
	\$ 533	\$14,737

IARU Fund (Note 3)		
Balance 1.1.79	\$ 390	\$ 4,683
Add Members Contributions	1,145	1,338
	1,535	6,021
Less Expenditure	683	5,611
	\$ 842	\$ 390

TABLE 6 (Supplementary). WIA members:

	Members with Limited Licence (No. of Licences)	Members with Novice Licence (No. of Licences)	Members with Full Calls (No. of Licences)	No. Lic. Lim. Grade	Percentage of total Licensed WIA Members	No. Lic. Nov. Grade	No. Lic. Full Calls	Percentage of Total Limited Licences	Percentage of Total Novice Licences	Percentage of Total Full Calls Licences
VK1	30				19.2%			66.7%		
VK2	354	481	100		19.2%	26.1%	54.6%	37.5%	47.2%	47.3%
VK3	373	421	953		21.4%	24.1%	54.6%	33%	48.0%	58.5%
VK4	151	338	455		16%	35.8%	48.2%	32.9%	64.3%	61.4%
VK5	147	256	451		17.2%	30.0%	52.8%	39.8%	59.5%	61.9%
VK6	66	110	312		13.5%	22.5%	63.9%	29.5%	56.7%	62.9%
VK7	52	69	135		20.3%	26.7%	52.7%	52%	80.2%	68.2%
Total	1173	1702	3412		18.7%	27.1%	54.3%	35.8%	53.2%	55.7%
(= 6287)										

RON WILKINSON ACHIEVEMENT AWARD

(Note 5)		
Salary 1.1.79	\$1,153	\$1,100
Add Interest	110	103
	1,263	1,203
Less Award Payment	50	50
	\$ 1,213	\$ 1,153

AUDITORS' REPORT TO THE MEMBERS OF THE WIRELESS INSTITUTE OF AUSTRALIA

1. In our opinion the attached accounts give a true and fair view of the state of the Institute's affairs at 31st December, 1979, and of its surplus for the year ended on that date.

2. As required by the Companies Act 1961, we report as follows:



PHOTO 1: The coveted "RD" Trophy is now back in VK5 and at the 1980 Federal Convention Andrew Davis VK1DA (extreme right) hands over the trophy to Col Hurst VK5HI. Dr. David Wardlaw VK3ADW (left) looks on.

In our opinion

- (a) The attached accounts are properly drawn up (1) so as to give a true and fair view of the matters required by Section 162 to be dealt with in the accounts; and (2) in accordance with provisions of that Act.
- (b) The accounting records and other records, and the registers, required by the Act to be kept by the Company have been properly kept in accordance with the provisions of that Act.

HEBARD & GUNNING, Chartered Accountants
(Sgd.) P. W. HEBARD
24th March, 1980 Partner

THE WIRELESS INSTITUTE OF AUSTRALIA EXECUTIVE STATEMENT

In our opinion

- (a) The statement of Income and Expenditure is drawn up so as to give a true and fair view of the surplus of the Institute for the financial year ended 31st December, 1979.
- (b) The Balance Sheet is drawn up so as to give a true and fair view of the state of affairs of the Institute as at the end of the financial year.

MEMBERS OF THE EXECUTIVE
(Sgd.) C. D. H. SCOTT
(Sgd.) K. C. SEDDON

STATEMENT OF PRINCIPAL ACCOUNTING OFFICER

To the best of my knowledge and belief the accounts for the year ended 31st December, 1979 give a true and fair view of the matters contained in Section 162 of the Companies Act, 1961, and required to be dealt with in the accounts as presented.

PRINCIPAL ACCOUNTING OFFICER
(Sgd.) P. B. DODD

HF TRANSCEIVERS FROM YAESU

NEW YAESU FT-707 "WAYFARER"

The exciting new FT-107 range



High quality transceiver.
All solid state operation with inbuilt AC power supply makes it well ahead of its time.
Available in two colours : grey or ivory.
Complete range of accessories available.
Write for brochure now!

We also stock:



ICOM IC22S	\$289.
LEADER Ham scope	\$309.
LEADER Dip meter	\$89.
TONO 7000E Computer	\$895.
DIWA CN620 SWR meter	\$95.
DIWA Ant. Coupler CN217	\$155.

"DIWA ROTATOR"



FT-207R Handheld.
2M Digital programmable transceiver.



Please Note !!!

These are recommended retail prices only.
We do better.

DR7500R Medium duty	"R"	\$182.
DR7500X Medium duty	"X"	\$189.
DR7600R Heavy duty	"R"	\$264.
DR7600X Heavy duty	"X"	\$229.

Chirnside Vertical Antenna Type CE-5B Features.
Long length and high Q traps makes the CE-5B more efficient than similar types of antennas especially on 80 Metres.
It is also very easy to tune and its construction is very rugged.

Specifications of the CE5B.
Bands: 80-40-20-15-10 M. Operation.
Power handling: 2 kW PEP.
SWR: 1.5 to 1 or better.
Length: 30' (approx)
Weight: 9KG. Packed.

\$99.--

CE-42 15-10 M. Duo-Band

HI-Q Balun \$16.

\$149

CHIRNSIDE CE-42 rugged duo band beam features 4 elements and uses independent reflectors for optimum results.

3 elements on 15 M.

3 elements on 10 M.

Director and driven elements have hi-q traps.

Forward gain is 8 dB and front to back ratio is in excess 25 dB.

FT-707. All solid state HF transceiver, incl. 10, 18, 24 MHz.	.....
FV-707. Digital VFO for FT-707 incl. scanning	.....
FC-707. Antenna coupler for FT-707.	.....
FP-707. DC power supply for FT-707 with inbuilt speaker.	.....
Rack mount for all the above items also available.	.....
FT-107M. HF transceiver excluding power supply.	.....
FT-107DMS. HF transceiver incl. DMS and power supply.	.....
FC-107. Antenna coupler for FT-107.	.....
FV-107. External VFO for FT-107 series.	.....
SP-107. External speaker.	.....
FT-107 Range is available in the colours grey or ivory.	.....
FT-107Z. New FM Transceiver.	.....
YM-35 Scanning hand mic.	.....
NC-2 Base Charger for 207A	.....
FV-101Z Ext. VFO for FT-101Z series	.....
FT-720 2M FM Transceiver Inc. Scanner	.....
FL-2100Z Linear for FT 101Z range.	.....
FT-101Z. 160-10M Transceiver, analog dial.	.....
FT-101ZD. 160-10M Transceiver, Digital.	.....
optional digital display for FT-101Z.	.....
optional Fan.	.....
optional DC-DC converter.	.....
YE-7A Hand mike.	.....
YD-148 Desk mike	.....
PT-901DM. 160-10M Transceiver.	.....
FV-901. ext. VFO for FT-901 & FT-101Z.	.....
YO-901. Panoramic adapter monitroscope.	.....
FC-901. Antenna coupler.	.....
FTV-901. Converter. 6M.2M.70 cm. all inc.	.....
FTV-901. Converter. 6M.2M. only	.....
SP-901. ext. speaker.	.....
FRG-7. Communication receiver.	.....
FRG-7000. Digital communications receiver.	.....
LF-2A Narrow band filter for FRG-7.	.....
FT-7B. 80-10M Transceiver.	.....
FP-12. 12 Amp. power supply for FT-7B.	.....
YC-7B. Digital display for FT-7B.	.....
FT-227RB. 2M Digital programmable transceiver.	.....
YP-150. Dummy load/Wait meter.	.....
FF-50DX. Low pass filter. 2kw.	.....
QTR-24D Deluxe 24 hr. World clock	.....
FT-207R Handheld.	.....
NC-2 Base Charger for 207A	.....
CHIRNSIDE CE-33 Triband Beam	.....

All FT-901 Accessories are compatible with FT-101Z series.

SPECIAL PRICE ON APPLICATION

MELBOURNE'S LEADING AUTHORIZED YAESU DISTRIBUTOR.
CHIRNSIDE ELECTRONICS, 26 Edwards Road, Chirnside Park, Lilydale, 3116. Phone (03) 726 7353

CONTESTS

Wally Watkins VK2DEW
Box 1066, Orange 2800

POSTAL & TELECOMMUNICATIONS DEPT.



CB RADIO WHAT CHANNELS? PUBLIC COMMENT WANTED

Radio frequency arrangements and regulations for CB radio are to be reviewed.

The Postal and Telecommunications Department is conducting a public inquiry with the following terms of reference.

To report to the Minister for Post and Telecommunications as soon as possible on whether the present 18 channel 27 MHz Citizens Band Radio Service, which was established on 2 June 1977, should be retained after June 1982.

In considering this issue regard should be had to:

- (1) all matters associated with the technical operating conditions, regulations, frequencies, channel allocations and procedures governing the Citizens Band Radio Service in both the HF (27 MHz) and UHF (477 MHz) bands;
- (2) the need to utilise and manage the radio frequency spectrum for the maximum overall benefit to the Australian community;
- (3) Australia's international obligations in radio frequency management; and
- (4) the need to minimise interference to other services.

The Department is seeking written submissions on these issues from interested individuals and organisations. Submissions should be sent to:

**First Assistant Secretary
Radio Frequency Management Division
Postal and Telecommunications Department
PO Box 5412CC
MELBOURNE VIC. 3001**

**CLOSING DATE FOR SUBMISSIONS:
15 AUGUST 1980**

**TELEPHONE INQUIRIES:
MR. J. KENNEDY (03) 609 1512**

July:

- 19/20 JACK FILES MEMORIAL CONTEST
- 19/20 10-10 INT. NET QSO PARTY
- 20 RSSB WAB LF CW CONTEST
- 26/27 VENEZUELAN CW CONTEST
- 26/28 COUNTY HUNTERS CW CONTEST

August:

- 9/10 REMEMBRANCE DAY CONTEST
- 9/10 EUROPEAN CW CONTEST
- 16/17 SEANET PHONE CONTEST
- 116 QLF ZL CONTEST (LOTS OF FUN)
- 23/24 ALL ASIAN CW CONTEST

September:

- 13/14 EUROPEAN PHONE CONTEST

October:

- 4/5 VK/ZL/OCEANIA PHONE CONTEST
- 11/12 VK/ZL/OCEANIA CW CONTEST
- 18/19 JAMBOREE ON THE AIR
- 25/26 CQ WW DX PHONE CONTEST

REMEMBRANCE DAY CONTEST — 9-10 AUGUST 1980

This year there are no rule changes and the formula is also the same, so there should be no need for any confusion. In order to help your Division each full call should put in two logs, one for CW and the other for Phone, even though they may only be for the minimum number of contacts. Good luck in the contest—the friendly contest—and hope to work you.

For those looking for rules CQ magazine has the most comprehensive list available. However a SASE to the FCM will get any of the above contest rules.

10-10 INTERNATIONAL NET SUMMER QSO PARTY Starts: 0000Z July 19, 1980. Ends: 2400 July 20, 1980.

QSO parties are open to all amateurs, but only 10-10 members are eligible for awards. All contacts must be made on 10m. Modes acceptable are AM, SSB, FM. QSO parties are not intended to demonstrate technical or contest endurance abilities, but to encourage interest in 10 metre operation. Members may submit numbers collected for bar awards, non-members may use them to qualify for 10-10 membership.

RULES

1. Exchange call, city, State, name and 10-10 number.
2. All station logs must be in UTC (GMT).
3. A station may be counted only once.
4. An operator may credit his/her score only to a local chapter of which he/she is a member. A local chapter is one that can be worked on ground wave when the band is closed.
5. One may work any 24 hours of the 48 hours available. They need not be consecutive, but must be in a minimum of one hour increments starting with the first contact. Any portion of a clock hour must be counted as a full hour. Example: You operate from 0130Z to 0229Z. This counts as two hours operating.

CLASSES OF OPERATION

1. Single operator.
2. QRP (20 watts PEP output SSB, 10 watts output AM).

SCORING

1. Each contact is worth one point.
2. Add an additional point if the station has a 10-10 number.

AWARDS

In each class a first place certificate to each Australian call area.

Logs are accepted from members only and are due by August 20th, 1980. Mail to Robert Watson, 2 Suffolk Ct., Oceanside, NY 11572. Cover sheet must show name, call, QTH, 10-10 number, chapter affiliation, total hours of operation, total contacts and total number of points claimed.

Remembrance Day Contest 1980 — Rules

9-10 AUGUST 1980

A perpetual trophy is awarded annually for competition between Divisions of the Wireless Institute of Australia. It is inscribed with the names of those who made the supreme sacrifice and so perpetuate their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and, in addition, the winning Division will receive a suitably inscribed certificate.

OBJECTS

Amateurs in each VK call area will endeavour to contact other amateurs:—

1. In other VK call areas, P29, and ZL on all bands 1.8 through 30 MHz.
2. In any VK call area (including their own), P29, and ZL on authorised bands above 52 MHz and as is indicated in rule 5.

CONTEST DATE

0800Z 9th August, 1980, to 0758Z 10th August, 1980. All amateur stations are requested to observe 15 minutes silence before the commencement of the contest on Saturday afternoon. An appropriate broadcast will be relayed from all Divisional stations during this period.

RULES

1. There shall be 3 sections —

- (a) Transmitting Phone.
- (b) Transmitting CW.
- (c) Receiving.

However separate logs may be submitted for sections (a) and (b).

2. All Australian Amateurs (VK call sign) may enter the Contest whether their stations are fixed, portable or mobile. Members and non-members of the Wireless Institute of Australia are eligible for awards.

3. Amateurs may use the following modes:—

Section (a) — AM, FM, SSB, TV.

Section (b) — CW, RTTY.

However separate logs may be submitted for sections (a) and (b).

4. Cross mode operation is permitted but both stations may only claim points as for a phone/phone contact. Cross band operation is not permitted excepting via a satellite repeater.

5. SCORING CONTACTS:

(a) On the 3.5, 7 and 14 MHz bands a station in another call area may be contacted once on each band using each mode. That is, you may work the same station on each of these bands on Phone, CW, SSTV and RTTY.

(b) On the 1.8, 21 and 28 MHz bands, a station in another call area may be contacted twice on each band, using each mode provided that not less than 12 hours has elapsed since the previous contact on that band using that mode.

(c) Between 1600 hours GMT and 2100 hours GMT on Saturday, intra-call area contacts may be made on the 1.8, 7, 21 and 28 MHz band once for each mode on each band.

(d) Between 0300 hours GMT and 0759 hours GMT on Saturday, intra-call area contacts may be made on 1.8, 21 and 28 MHz bands, once for each mode on each band.

(e) On the bands 52 MHz and above, the same station in any call area may be worked using any of the modes listed in rule 3 at intervals of not less than two hours since the previous same band/mode contact. However, the same station may be contacted repeatedly via satellite not more than once by each mode on each orbit.

(f) All CW/CW, SSTV/SSTV and RTTY/RTTY contacts count double. Note rule 4 re cross mode contacts.

6. Multi-operator stations are not permitted (except as in rule 7), although log keepers area allowed. Only the licensed operator is allowed to make a contact under his/her own call sign. Should two or more licensed operators wish to operate any particular station, each will be considered as a contestant and must submit a log under his own call sign.

7. Club stations may be operated by more than one operator, but only one operator may operate at any one time, i.e. no multi-transmissions. All operators must sign the declaration.

8. Entrants must operate within the terms of their licences.

9. CYPHERS:

The serial number will consist of three figures that will be incremented by one for each successive contact. A contestant may start with any number between 001 and 999 but when 999 is reached he will start again at 001.

10. ENTRIES must be set out as shown in the example using one side of the paper only. Envelopes must be marked "Remembrance Day Contest", postmarked no later than 8th September, 1980, and posted to FCM, Box 1065, Orange 2800.

11. TERRESTRIAL REPEATERS: Contacts via terrestrial repeaters are not permitted for scoring purposes. However, contacts may be arranged through the repeater and if successful on another frequency, that contact counts for scoring purposes.

12. PORTABLE OPERATION: Log scores of operators located outside their own call area will be credited to that call area in which operation takes place, e.g. VK5XY2. His score is added to the VK2 scores.

13. All logs shall be set out as in the example shown and in addition MUST carry a front sheet showing the following information in this order:

EXAMPLE OF TRANSMITTING LOG

Date/Time GMT	Band	Mode	Call sign worked	NR sent	NR rec'd	Points
---------------	------	------	------------------	---------	----------	--------

EXAMPLE OF RECEIVING LOG, VICTORIAN SWL

Date/Time GMT	Band MHz	Mode	Call sign heard	NR sent	Station called	Points
10/8/80						
0612	7	P	VK5PS	002	VK6RU	2
0615	7	CW	ZL2AZ	004	VK4KI	6
0618	14	P	VK0ZZ	006	VK6FI	6
1620	28	P	VK3NAA	077	VK6NZZ	1

SCORING TABLE FOR PHONE CONTACTS — ALL CW/CW, SSTV and RTTY CONTACTS COUNT DOUBLE (VK)

From	0	1	2	3	4	5	6	7	8	9	P29	ZL
VK0	—	6	6	6	6	6	6	6	6	6	6	6
VK1	6	—	2	3	3	3	4	3	4	5	5	3
VK2	6	2	—	2	2	3	4	3	4	5	5	3
VK3	6	3	2	—	3	2	4	2	5	5	5	3
VK4	6	3	2	3	—	3	5	5	2	4	2	4
VK5	6	3	3	2	3	—	2	3	3	5	5	4
VK6	6	4	4	4	5	2	—	3	2	5	5	5
VK7	6	3	3	2	5	3	3	—	5	5	5	3
VK8	6	4	4	5	2	3	2	5	—	2	2	4
VK9	6	5	5	5	4	5	5	5	2	—	5	4
P29	6	5	5	5	2	5	5	5	2	5	—	4
ZL	6	3	3	3	4	4	5	3	4	4	4	—

All intra-call area contacts on 52 MHz and above, or as indicated in Rules 5 (c), (d) and (e), are worth one point.

Section, Score, Call Sign, Modes, Name, Address.

Declaration: "I hereby certify that I have operated in accordance with the rules and spirit of the contest."

Signed _____ Dated _____

14. The Federal Contest Manager has the right to disqualify any entrant who, during the contest, has not observed the regulations, or has consistently departed from the accepted code of operating ethics. The Federal Contest Manager also has the right to disallow any illegible, incomplete or incorrectly set out logs.

15. The ruling of the Federal Contest Manager of the WIA is final and no disputes will be entered into.

AWARDS (Sections (a) and (b))

Certificate will be awarded to the top scorer in each section for each call area and will include the top Limited and Novice station. There will be no outright individual winner. Further certificates may be issued by the FCM at his discretion.

The Division to which the Remembrance Day Trophy will be awarded shall be determined by the following formula:—

Total call area score from sections (a)-(c) of rule 1 multiplied by the number of full call logs received from that area and divided by the number of full licences in that call area.

VK0 scores are added to VK7 and VK8 to VK5. Scores by VK8 stations are added to the mainland call area geographically nearest. Scores claimed by ZL and P29 stations are not included in the scores of any VK call area.

Acceptable logs for all sections shall show at least 10 valid contacts. The Trophy shall be forwarded to the winning Division in its container and will be held by that Division for the specified period.

RECEIVING SECTION

1. This section is open to all Short Wave Listeners in Australia, Papua, New Guinea and New Zealand, but no active transmitting station may enter.

- Contest times and logging of stations on each band are as for transmitting.
- All logs shall be set out as in the example. It is not permissible to log a station calling "CQ". The detail shown in the example must be recorded.
- Note the times and conditions set out in rule 5 (transmitting).
- Club stations may enter this section. All operators must sign the declaration.

AWARDS

Certificates will be awarded to the highest scorers in each call area. Further certificates may be awarded at the discretion of the Federal Contest Manager.

DIVISIONAL NOTES

VK2

The Tamworth Amateur Radio Club wishes to advise that the "NOEL TAYLOR MEMORIAL FIELD DAY" will be held in the Tamworth area on the long weekend of October 4-5.

All amateurs from Novice to Full Call will be entertained together with children of those attending.

For further details please contact the Field Day Committee via Peter Squires VK2DAU, PO Box W197, West Tamworth 2340. Also listen for VK2JNW, VK2NXZ, VK2NMB, VK2DAU and VK2DT for information.

VK3

From Jack Thomas VK3NTR, Publicity Officer of the Western Zone, comes the following news.

The annual meeting of the Western Zone of the WIA (Vic. Division) was held at Ararat on May 3rd, 1980.

Unfortunately attendance was poor.

Office-bearers for 1980-81, with Woody VK3AGD in the chair, were:-

President: B. Stares VK3ZBS/NVI,
 Senior Vice-President: J. Hinton VK3ZML/NDT,
 Junior Vice-President: K. Reid VK3BPH,
 Secretary/Treasurer: J. Thomas VK3NTR,
 Zone Technical Officer: J. Dennis VK3BPM,
 Wicon Co-Ordinator: G. Gelleri VK3AEU,
 Intruder Watch Co-Ord.: D. Baulch VK3AKN,
 Publicity Officer: J. Thomas VK3NTR,
 Zone Committee: John VK3BPM, Peter VK3AQO,
 George VK3GN, Brian VK3BWA, Oliver VK3AEU,
 Charlie VK3VEJ.

Repeater Committee: John VK3BPM, Ray VK3AQS,
 George VK3GN, Jim VK3ZML, Brian VK3BWA,
 Laurie VK3NDL.

The Zone has its hook-up every Monday at 8 p.m., 1000 hrs, UST on Channel 7 2m and 3.585 plus or minus QRM.

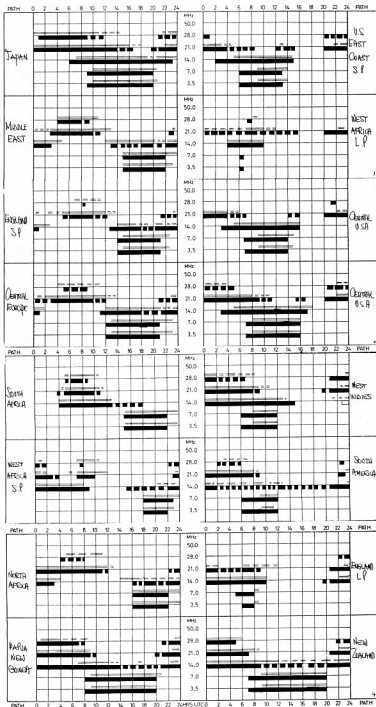
QSP

APRIL WAS HERE

Most intriguing to read about a device which looked like a large toroidal core and had the effect of completely reversing the direction of any field trying to pass through it. The mathematics are stated to be very involved but an important consequence was that gravitational attraction was completely reversed within the area of the device. After some experimentation by the amateurs who invented and developed it, the logical outcome was an "aerial station" 70 cm repeater tethered some 300 metres above ground, the height being governed only by feeder losses. This gem came from the April issue of Radio Communication. CQ for the same month carried an article explaining that sporadic E does not exist. Amateurs and scientists world-wide appear to have been the victims of a gigantic hoax. In fact, says the article, the phenomena ascribed to sporadic E is really caused by a closely-guarded secret, a lightweight aluminium wire grid with a weight of about 0.035 grams, 4 metres in diameter, suspended at a height of 50 to 60 miles by 150 kW of electromagnetic radiation.

IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE





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This HF rig is high performance at budget price with todays technology. An SSB/CW Transceiver providing resolution to greater than 1 kHz, RF speech processor, analog frequency display. FT-901 series accessories can be added later.



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We have a fully equipped electronic service division. We can service enthusiast and commercial electronic gear efficiently and at a reasonable charge.

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CW can arrange service and service contracts of Commodore computers within Australia and PNG.

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***WHILE CURRENT STOCKS OF M65 LAST** *Refer to license limitations on Morse and RTTY communications.



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With each Commodore 16K or 32K mini-computer purchased from CW Electronics by a licensed Amateur Radio Operator will come, at no extra cost, a MACRO-TRONICS M65 Ham Interface for Morse Code and RTTY (and ASCII) Transceiving.
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LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

Box 68, Yarram 3971.
April 20.

The Editor,
Dear Sir,

Like many other amateurs I understand that Novice licensing was to be of a limited tenure of two years.

It is fortunate that most Novice calls are keen to progress to the full ticket, and of course being on air is an ideal way of improving one's capabilities, both theoretically and CW.

Seems to me, however, that a fair number, having reached the dizzy heights of 5 w.p.m. and that "hard" multiple choice paper, are prepared to remain Novices for evermore. (Be interesting to know how many are still "N" calls from early days.) Furthermore some of these fellows put out remarkably strong signals from their modified (?) appliances. Could of course be super efficient aerial systems.

Before we degenerate completely to CB level (and I reckon we are well on the way) is it possible to get the department to bring in limited tenure. Whilst we are at it, introduce some system to give the "home-brew" type Novice some incentive. Had enough most full call bitches (self included) are appliance operators these days. Let us at least start the new intake off on the right track.

It's my opinion that if you cannot make AOC after two years on air then you are definitely in the wrong hobby.

Yours faithfully,

Jack Mellor VK3AMG.

15 Broughton St., Tumut, NSW 2720.
17/4/80.

The Editor,
Dear Sir,

I feel prompted to write this letter after a lot of thought and reading several issues of AR. I would have thought by now that someone would have given a reason for several of my fellow amateurs (if they were all someone so they would call myself that) to feel they are so special that they deserve their own frequencies; I am of course writing about the new allocations that came out of WARC 79.

Do these people think they are so alone in wishing for a clear piece of the spectrum to work on? The rest of us would like to have a contact without the problem of other stations spluttering all over us, but I think we are getting a bit selfish in suggesting that a special person with better qualifications be allowed the 24 MHz section or any other section for that matter.

I think the whole Amateur Radio Fraternity AOC are entitled to use the new allocated bands, not just a few people who think they are special because they know a bit more. (I agree - Ed.)

I am sorry this letter sounds a bit sour, but that's how I feel. I will admit I am a bit spoiled, the amateurs who taught me were completely unselfish, and some of that must have rubbed off.

Yours sincerely,

Butch Chapman VK2BYS.

202 Frankston-Flinders Road,
Balmarrach 3926.
17th March, 1980.

Mr. P. B. Dodd,
Wireless Institute of Australia,
PO Box 150,
Toorak 3142.
Dear Peter,

Your letter of 8th February and the attached cheque came as a great and pleasant surprise to me.

The thought that I may be awarded the 1979 Higginbotham Award as a "thank you" for the work I put in on the Magazine/Publications Committee

over the past twenty-odd years. Only the other day I went through my "personal papers" file and discovered a letter from George W. Baly VK3AOM when he acted as secretary to the Committee, dated 15-3-66, indicating that I had joined the Committee on 18th February, 1958.

I would like to thank Bruce and the other members of the Committee very much for this award, which I shall always treasure, and I shall always remember the pleasure I received from my association with the Committee.

If members happen to be passing here at any time I am sure that my wife and I will always be glad to make them welcome in the best spirit of "Amateur Radio".

Yours sincerely,

Syd Clark VK3ASC.

WICEN

Ron Henderson VK1RH

Federal WICEN Co-ordinator,

53 Hannaford St., Page ACT 2514

Ph. (062) 54 2059, A.H.

WICEN is the Amateur Radio Service Emergency Communications Organisation established to assist the Statutory Authorities during periods of Civil Emergencies.

The Amateur Radio Service is defined in International Telecommunications Regulations as a service of self-training, intercommunication and technical investigation conducted by duly authorised persons with a personal non-pecuniary interest in the development of radio techniques.

In Australia, the Wireless Institute of Australia (WIA) is the national organisation representing Amateur Radio licensees. Established in 1910, the WIA is the oldest radio society in the world and is a member of the International Amateur Radio Union, whose membership representation includes almost every country in the world—East and West—developed and developing.

Each State in the Commonwealth except the newly created Northern Territory State, is a Division of the WIA, with its own autonomous Divisional Council, its own WICEN organisation and with representation on the Federal Council of the WIA.

A Federal WICEN Co-ordinator, residing in Canberra, is the WICEN advisor to the Federal Executive body and the liaison officer to the Natural Disasters Organisation.

In New South Wales, the WICEN organisation is controlled by a State WICEN Co-ordinator, who is also Chairman of the State WICEN Committee, which is a sub-committee of the NSW Divisional Council.

The State is subdivided into ten Regional WICEN areas, plus five smaller Regions covering the densely populated districts of Sydney and adjoining areas.

Each WICEN Region is controlled by a Regional WICEN Co-ordinator assisted by a number of local WICEN Co-ordinators who, in the main, reside in the major centres of population in the Region.

WICEN is also a fully affiliated member of the NSW Volunteer Rescue Association, which is closely aligned to, and operates in conjunction with, the NSW Police Rescue and Disaster Branch.

From the foregoing it will be apparent that the WIA, and WICEN, is well structured and efficiently administered.

In NSW the administrative organisation of WICEN has been specifically tailored to meet the requirements of any NSW Government Act that could be involved during the course of a Civil Emergency.

The self-imposed discipline and dedication that a prospective amateur licensee must acquire to obtain a licence is a most valuable asset when that person is involved in an emergency situation and is bound by the particular Parliamentary Act governing the emergency.

Without exception all members of the NSW WICEN organisation are volunteers and are licensed Radio Amateurs—many of whom occupy senior

positions in the electronics and communications industry. To obtain a licence, a prospective amateur must successfully complete examinations conducted by the Postal and Telecommunications Department of the Australian Government. The examinations embrace radio and electronic theory (transmitters, receivers, aerials, power supplies, etc.), national and international regulations and, for certain grades of licence, Morse code proficiency.

Prior to acquiring a licence the prospective amateur must complete and sign a Secrecy of Wireless Transmissions Statutory document which prohibits the licensee divulging any text, or portion thereof, of any transmission made or received.

Radio Amateurs are licensed to operate in designated frequency bands ranging from medium frequency (1600-1860 kilohertz) to super high frequency (2100-2200 megahertz), and, resulting from the recommendations of the 1979 World Administrative Radio Conference (WARC) in Geneva, a number of additional bands are to be made available shortly, which is indicative of the international recognition of the role and importance of the Amateur Radio Service. The amateur licence has a wide choice of modes of communication, with Morse code, amplitude and frequency modulation, single side band, radio teletype and slow scan television being most popular, and has other modes available for specialised and experimental purposes.

To date, the Amateur Radio Service has placed eight amateur HF/VHF/UHF satellites in orbit around the earth, with more planned and under construction. The satellites were designed, built and financed by amateurs on a world-wide co-operative basis.

The majority of NSW WICEN members operate both fixed and mobile stations, together with portable and hand-held transceivers for use in areas inaccessible to vehicles.

The increasing number of amateur VHF repeater stations, over twenty in New South Wales alone, provides amateurs with reliable noise free communications throughout the majority of the State and offers up to 100 km range from low-power hand-held portable transceivers.

In NSW, WICEN is an organised disciplined body which can provide a unique, specialised community service that no other organisation, be it voluntary or Statutory, can provide.

WICEN offers the Statutory Authorities a variety of communication modes, a wide range of sophisticated equipment and the trained, disciplined manpower to operate the facilities and, if required, competent relief personnel for the Authorities' own communications terminals—all at no cost to the Authorities, the Government or the general community.

The foregoing is but a brief resume of the Amateur Radio Service and the NSW WICEN organisation.

H. Freeman VK2NL.

WICEN IN THE HOUSE

Extract from the NSW Legislative Assembly Parliamentary Debates (Hansard), 6th March, 1980. The Member for Gordon, T.J. Moore, LL.B., M.P., speaking during the debate on Bush Fire matters—

"I draw attention also to one group of volunteers not often mentioned—the Wireless Institute of Australia emergency surveillance network—who come in to help provide communications between volunteer brigades working outside their area with a radio network that is not on their own domestic frequency. They do a magnificent job and are far too often overlooked in the bouquets handed out by people, such as the Minister, the honourable member for Pittwater and the honourable member for Nipper when dealing with disasters in their areas."

BUYING OR SELLING GEAR?

HAMADS

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AWARDS COLUMN

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7 Lillac Avenue, Flinders Park, SA 5025

WORKED ROCKHAMPTON AWARD

This Award, known as the WRA, is awarded by the Central Queensland Branch of the Wireless Institute of Australia to any licensed amateur in any part of the world operating from a fixed, portable or mobile amateur station, on the following conditions:—

1. **STATIONS OUTSIDE AUSTRALIA:** By making ten (10) two-way contacts with licensed amateur stations in Rockhampton, Queensland, on either CW, AM, SSB or RTTY on any HF and/or VHF band.

2. **STATIONS WITHIN AUSTRALIA:** As in Rule 1, but fifteen (15) two-way contacts. (Stations resident in Rockhampton are not eligible for the award.)
3. No cross mode contacts are permitted.
4. Contacts via Rockhampton's 2 metre repeater are allowed.
5. Contacts with the official Central Queensland Branch station VK4WIR will count as two points.
6. Specially endorsed certificates will be issued for contacts made on one band and/or one mode only, i.e. CW, AM, SSB, etc.
7. Claims are to be submitted on a LIST showing stations worked, date, GMT, band and mode. QSL cards are NOT to be sent.
8. The cost is 5 IRCs or equivalent.
9. Applications together with the list should be forwarded to:—
Central Queensland Branch WIA,
GPO Box 496, Rockhampton, Queensland 4700, Australia.

DESCRIPTION

The Award measures 215 mm x 285 mm, printed on white card with the map of Queensland in blue, surround in blue and motif and all printing in black.

DEVIL AWARD

The TASMANIAN DEVIL AWARD is created to interest Australian and overseas amateurs in contacting reasonably rare VK7s. Tasmania, the island state of Australia, has many features, the "Devil" Award is named after one of these.

TO QUALIFY

You may qualify for the Award in any one of the sections or sub-sections.

SECTIONS

1. MF-HF:

- (a) Open — by the use of any combination of bands up to 30 MHz, and modes available to applicant.
- (b) One band — of those available.
- (c) One mode — of those available.
- (d) All Novice — contacts with Novice calls.

2. VHF:

- (a) Open — by the use of any combination of bands above 30 MHz, and modes available to the applicant.
- (b) One band — of those available.
- (c) Satellite — contacts via amateur satellites. Cross band to HF allowed if permitted under licence terms.
- (d) Repeater — via in-band repeaters.

Claims:

HF:

Applicants must establish two-way contact with a number of VK7 amateurs depending on the applicant's location.

Australia, including Tasmania	50 contacts.
Oceania, Antarctica	30 contacts.
Asia, North America	20 contacts.
Europe, South America	10 contacts.
Africa	7 contacts.

VHF:

Applicants to contact 20 VK7 amateurs with at least one station in each of the three WIA Branch areas.

Verification:

Claim logs, with applicant's name, call, section, to show station contacted, date, time, band and mode. The claim to be signed by applicant and countersigned by two other amateurs. Spot checks will be made with contacted stations in VK7 for confirmation. QSLs will not be required.

Commencement:

Contacts made since first day in January 1978 can be used in claims.

Applications:

A fee of 10 IRCs overseas or 5 IRCs within Australia or equivalent should accompany claim to cover cost of award and postage and be sent to:—

VK7 QSL Bureau,
PO Box 371D,
Hobart, Tasmania 7001.

Description:

The Award measures 205 mm x 230 mm, printed on light blue card with the map of Tasmania in green, "DEVIL AWARD" and the nose and mouth in red, the head in black and all printing in black.

Good hunting.

DEVIL AWARD TASMANIA



147° E

42° S

The Tasmanian Division of the
Wireless Institute of Australia
grants the

TASMANIAN "DEVIL" AWARD

No. _____ to
operator of Amateur Radio

Station _____

Awards Manager _____

Date _____

Section _____

Section _____

Award No. _____

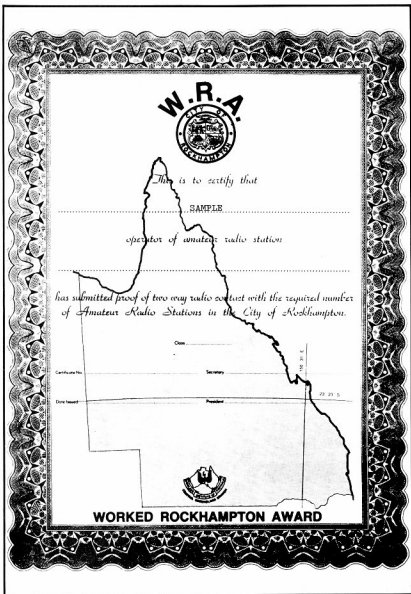
THE RADIO AMATEUR'S CONVERSATION GUIDE

A most useful adjunct for working
the DX station not proficient in
English. Good also for contests.

\$9.00 brings you a copy, post paid.

MAGPUBS

P.O. Box 150, Toorak, Vic. 3142



MAGAZINE REVIEW

Roy Hartkopf VK3AOH

ZERO BEAT March 1980

(Youth Radio Scheme magazine.) State News (G). VHF Sniffer (C). Etched Circuit Boards (G). "BattleShip" game using TIL 305 LEDs (C). YRCS Directory (G).

BREAK IN January-February 1980

WARC Results (G). Pin Diodes for TR Switching (TC).

HAM RADIO February 1980

Coaxial Line Transformers (GC). Yagi Antenna Design (T). Plasma Diode Experiments (Micro-wave Detectors) (TP).

NOTE

Radio Electronics is running a series of articles (Part 6 in the March 1980 issue) on a backyard satellite TV receiver. Frequency around 4 GHz and some interesting stripline design is included. If copies are difficult to find, try the public reference library.

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

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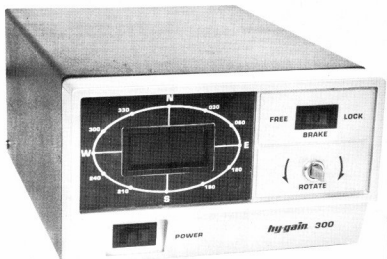
Address



P/code

PP6004/AR01

AROUND THE TRADE



HYGAIN HEAVY DUTY ANTENNA ROTATOR

Hygain have recently announced the release of their new heavy duty antenna rotator, the HDR-300.

The HDR-300 when tower mounted will easily turn and hold up 25 square feet of antenna area and with a stall torque of 5000 lbs., is rated higher than any other amateur rotator on the market. The HDR-300 weighs 12.7 kg (28 lbs.) and the control console 7.28 kg (16 lbs.). Rotation time for 360 degrees is sixty seconds and power requirements are 110/220V AC at 50/60 cycles and for the motor 24V AC 12A maximum, 1/10 HP PSC, single phase.

Maximum vertical load for the unit is 226.8 kg (500 lbs.), braking torque (min.) 5000 in. lbs. (565 N-m) and coasting torque 600 in. lbs. (67.8 N-m).

For further information and current price contact the distributors, Audio Telex Communications Pty. Ltd., 1 Little Street, Parramatta, NSW 2150. Phone (02) 633 4344 or telephone their regional offices, Melbourne (03) 277 5311, Queensland (07) 44 8388.

At left: the control box for the new Hygain HDR300.

VICOM NEW ZEALAND EXPANDS

Due to the huge success of VICOM's New Zealand operation an address change which will provide both larger and better positioned premises has been made.

The new address is 84 Whites Line East, Lower Hutt. Phone 69 7625.



DAIWA RELEASES NEW WARC ANTENNA TUNER

Daiwa look like being first on the market with an amateur radio antenna tuner which has been designed to incorporate the WARC bands of 10, 18 and 24 MHz. The coupler handles 500W PEP and includes the popular direct reading "cross needle" type SWR/PWR meter.

Output impedances of 10-300 ohms can be handled with an input impedance of 50 ohms. The new model will be called the CNW418, is distributed by Vicom and should be available soon at most amateur stores.

For further information contact Vicom International or your favourite amateur dealer.

ICOM RELEASES NEW WARC TRANSCEIVER

ICOM of Japan have released their latest HF amateur transceiver, the Model IC720. The new-comer to the ICOM stable incorporates a general coverage receiver (0.1-30.0 MHz) and all the new bands approved by WARC 79.

In common with most other ICOM transceivers, the nucleus of the unit is a microprocessor. Tuning is accomplished by the successful "optical chopper" VFO, which means better linearity, no backlash and no variable capacitors—eliminating problems known to occur in other transceivers.

The IC720 also features a speech processor, bandpass tuning and an effective noise blanker as standard.

To enhance the IC720 a new range of options will be released including an automatically tuned HF mobile antenna system, covering all HF bands.

Principal specifications are as follows:—

FREQUENCY COVERAGE

Receive 0.1 to 30.0 MHz.

Tx/Rx 160m, 80m, 40m, 20m, 15m, 10m, plus 10/18/24 MHz.

MODES

SSB/RTTY/CW/AM.

OUTPUT POWER

SSB 10-100W variable.

SPURIOUS

Better than 60 dB below.

SENSITIVITY

Better than 0.25 µV for 10 dB S + N/N.

For further information and latest price on the new IC720 contact the Australian distributors, VICOM International, on Melbourne (03) 699 6700, Sydney (02) 436 2766 or any of their authorised dealers.



The new ICOM IC720 is pictured above and should be available shortly.

SILENT KEYS

It is with deep regret that we record the passing of—

Mr. H. A. J. NOTTINGHAM VK2HN
Mr. T. TATHAM VKQTH
Mr. W. F. M. HOWDEN VK3BQ
Mr. E. PERKIN ex-VK3EP
Mr. F. H. PRICE L60030
Mr. R. F. HENWOOD VK6RL
Mr. A. H. DOWNWARD VK4AD
REV. D. E. LAVER VK4ZDL
Mr. J. H. STEPHEN VK5JS

OBITUARY

TERRY TATHAM VK2TU
It is with regret that we have to advise of the passing on the 14th May 1980 of Terry Tatham VK2TU from Turramurra.

Terry was well known to Sydney two-metre and HF operators for many years. During the 1950s when Terry was in his teens, he contracted polio and spent a great many years in hospital. In recent times Terry was able to live at his home at Turramurra where with the aid of his electric wheelchair he was fully mobile about the property. His interests were diverse — besides Amateur Radio he was in the process of construction of a large boat. He was widely read as well as undertaking courses in various subjects including real estate and auctioneering. Regrettably, this year Terry had been back in hospital for long periods.

EDWARD (TED) PERKIN Until 1953 VK3EP Passed away 22nd March, 1980, at Bendigo, Victoria. Commenced operating in Rochester, Victoria, in 1938, and moved to Bendigo in December, 1938.

While off the air during the war years, he was a Morse code instructor for the RAAF Air Training Corps in Bendigo.

VK3EP was licensed again on 8th January, 1946, and transmitted continuously until 1953. From that date on he only maintained his receiving rig.

1937 was his record year for QSOs, registering a total of 883 for the year in his log book.

B. P. Ellis VK3BFI.

ARTHUR HARVEY DOWNWARD VK3AHD On April 26th, 1980, amateur radio in Australia lost one of its more colourful characters when Arthur Downward lost his life as the result of a road accident.

Born in Port Melbourne on the 17th January, 1924, and first licensed on the 6th September, 1950, Arthur's first love was amateur radio. He was a strong opponent of any measure which might have an adverse effect on his hobby.

He was interested in most branches of amateur radio, and at the time of his death was preparing to take up ATV.

Arthur served an apprenticeship with Johns & Waygood as a fitter and turner in what is now Kingsway in South Melbourne, and when bronchial troubles made it inadvisable to follow this trade, he became a telephone technician, an occupation he retained to the time of his death.

To his two sisters and family we extend our condolences.

Arthur Harvey Downward will be sadly missed by his many friends in all sections of the community, and especially in amateur radio.

John Ireland VK3AJI.

OBITUARY

HERBERT NOTTINGHAM VK2HN
It is our sad duty to report the passing on 13th May 1980 of Herbert Nottingham VK2HN of North Ryde. Her was located near Lane Cove Road and his tower and quad were a landmark in the area.

HAMADS

- Eight light lines for all WIA members.
- 9p per 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication.
- Communications received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA 1979 Call Book.

FOR SALE

External VFO, suits FT101Z or FT901, connecting cable supplied, has 40 memories and manual or auto scan, perfect cond., new price \$430, sell for \$380; will consider offers. VK2AZT. Ph. (069) 42 1392.

Tri Band Antenna, 20, 15, 10m, 3 elements, Western DX33, HD traps, 1 kW rating, with balun, same specs as Hygain T3X Mk 3, 6 months old, exc. cond., \$195; 5 el. 2m quad, built as per RSGB VHF/UHF manual, good cond., \$35. B. Bathols VK3UV, QTHR, Ph. (03) 80 6424 evenings.

New Butleren Vert. Antenna, HFV-5, for use on 80-10m, especially in low profile, restricted, height/spare areas like roof of high rise bldg, or caravan park, traps are used for 10-15m operation but entire radiator 16 ft. length is active on all other bands, \$120. ONO, VK2NI, QTHR, Ph. (02) 872 1470.

FT101S Tx Rx, imported direct from Japan, full legal power, 400W PEP, DC to DC converter, fan cooled, original packaging, immaculate cond., \$555. VK3BSU/VKQ, QTHR, Ph. (03) 550 1859 after 6 p.m.

Kenwood TS520S, 5 el. 10/11 yagi and rotor, 150 cfm RS85U, dist. mic. 2-way coax switch, HF 250W linear, 3 el. 10/11 yagi, small 38 ft. tower, CW key, all near new cond., the lot \$1,000. Bruce Emerson VK2NSE, QTHR.

IC280, removable head, synthesised 2m FM Txcr (S/N 03505), incl. inbuilt scanner, less than 1 year old and in mint cond., sacrificed to sell quickly at \$325. ONO, Mike VK1VW. Ph. (062) 88 6994 AH, 83 2684 Bus.

Yaesu FT101E Txcr, from deceased estate, in excellent cond., complete with m.c., \$550. VK5AGO, QTHR, Ph. (087) 35 4241.

Complete Station: Yaesu FT101Z, with CW filter, fan, desk mic, 18-AV vertically (Hygain), 8 spare 6146, and Kenwood TR2200A with 5 el. beam plus much more, \$1,100. ONO. SASE to F. Redburn, 25 Netherwood Rd., Maida Vale, WA 6057. Ph. (09) 454 6811.

Argonaut 509 QRP Transceiver, as new cond., home brew keyer, mos, really good rig, \$400; transmitter, 1500 volts a side at 1/2 amp., \$20. VK2LH, QTHR, Ph. (02) 456 2627.

TS126S, as new cond., in carton, and MC10 mic, \$640, no offers. VK2BVS, QTHR, Ph. (069) 47 1598.

Yaesu Linear FL2100B, excellent cond., \$375. VK3AL, QTHR, Ph. (03) 690 1691.

Uniden 2020, 80-10m Transceiver, CW filter, as new, \$550. ONO, VK3BTO. Ph. (03) 489 7468.

Tommy VK4FW received his licence on the 3rd January, 1980. His grandma bought him a full brand new outfit for his ham shack. Unfortunately he was so ill that he only made 20 QSOs. He passed on at the end of March at sixteen years old. Now comes the sad part . . . the equipment listed is for sale at a most reasonable price. Kenwood TS680, external VFO for the 820, 820 speaker, SWR meter, key and headphones, vertical antenna 80-10, collection of odds and ends; all the above equipment in unmarked brand new cond., the lot for around \$1,250. ONO. Please contact Ray VK4ACU. Ph. (075) 45 1629 or QTHR.

DX-160 Rx, with speaker, excellent cond., \$125. QTHR via 140016 or phone Ken Ray (062) 65 2003. Bus. (062) 88 6459 AH.

Admiralty Wavemeter, G78 model, 200-250 MHz, made in 1942, not complete. Ph. (02) 73 2662 AH.

ICOM IC22 2m Mobile Txcr, repeaters 1 to 9 inc., 2mplex ch. 40, 50, complete with mic. and mobile mnt. bkt., excellent cond., \$145. Laurie Wade VK2AOW. Ph. (02) 436 2766 Bus., (02) 969 2160 AH.

ICOM IC280 2m FM Txcr, full 4 MHz coverage, 200W, 2S85; 2 TCA 1677A, fair, \$30 each; WR6 on 6.25 MHz, good, \$40; sundries. VK3YMW, QTHR, Ph. (058) 21 8458.

FT7, immaculate, little used, incl. CW/SSB audio filter, relay switching for linear, appt. frequency facility, 10 dB step attenuator, \$440; Palomar broad band 80-10m solid state amplifier, 200W PEP output, new in carton, \$195; Daiwa RF 550 speech processor, as new in carton, \$120; new FT7 9 MHz xtal filter, \$40. VK3ARZ, QTHR, or phone VK3COM (03) 569 9215.

Drake R4A T4X5 M54 Speaker, mic and PS, instruction book, \$475; IC22A 7 ch. 2 repeaters, \$170; instruction book and mic. VK3CB, QTHR, Ph. (03) 24 4154.

Shack Clean Out: Hewlett Packard 680D VHF signal generator, 10-420 MHz, \$500; Hewlett Packard 540B transistor oscillator, measures F to 18 GHz, in-built CRO, etc., \$75; Panoramic LPIA RF spectrum analyser, 10 MHz-4 GHz, \$270; Panoramic audio spectrum analyser with response and IMD accs., \$250; digital equipment Cdn. analogue to digital converter, \$200; Bercher translator test unit, very comp. lab. inst., 5 major modules, superb, \$270; Tektronix pre-amp. PSU type 127, \$70; Telequip 3 in 6 MHz CRO, \$75; EAL DMM, \$20; Wiltron fidelity test set 701, \$50; Phillips transistor test set, \$35; transistor current PEB, 0-25V, \$30; environment oven, approx. 8 c. ft. \$55; Beckman RA channel pen record, 16 in. width, 4 pre-amps, \$110; K & H. cox. acceptance tester, 30 MHz CRO, \$40; Houston X-Y timebase, \$27; TV gear: Marconi sync. gen., \$37; A4A harmonic gen., \$13; Astor pulse and bar gen., \$15; Astor pulse reflection set, \$15; Astor VHF sweep gen. SG1, \$35; Astor wave generator, 10 in. 1, \$50; Astor wave generator, \$72; A4A sync. gen. panel TS61, \$55; plus lots more. Leon VK3ZN. Ph. 557 6031.

6m and 2m Transverter with accessory/control unit: Yaesu FTV650 6m unit, v.g.c.; home brew FTV250 2m unit, professionally designed and constructed, 200W PEP capability; accessory/control unit, professionally designed and constructed, providing power supplies, full metering, switching and cross band operation for up to 4 transverters and HF, two tone generation and speech compression for the txcr, provision for auto CW, tape rec., sweep VFO, all in matching Yaesu 400 series cabinets, comprehensive collection of spares, all manuals, circuit diagrams, design notes and drawing support, complete set, \$1,500; \$500; Mecom TF982A VHF test set/signal generator accurate and operational, with manual, \$75; JVC Nivico TD684 4 track stereo tape deck, with new reel of tape, 7 in., \$60. Graham VK3NVP, East Gippsland Zone Disposal Office, QTHR or phone (051) 56 2397.

Kenwood KP202 2m Txcr, ch. 40, 50, repeaters, 2, 4, 6, 8, perfect cond., flexible and standard aerial, with special universal charger, \$150. ONO. Ray VK3AOK, QTHR.

Vibroplex Bug, bought new in the USA earlier this year, but surplus to requirements, hardly used, \$35; also two Rotron whisper exhaust fans, 12 cm sq., 115V, ideal for linears, \$15 the pair. Roth Jones VK3BG. Ph. (03) 870 3333 Bus., 848 7945 AH.

ICOM 701 with power supply, mic., 4 memory remote control unit and junction box, \$1,350. ONO. VK5KT, QTHR, Ph. (08) 338 2392.

Kenwood TS520S, with DC converter and SWR meter, \$550; Yaesu FR101 Rx, 160-2m, bands as new \$550; Yaesu FLOX 2000 linear amp with new spare set of valves, \$280; RD tail-wind rotor, unused, still in carton, \$180; VC SWR bridge, \$25; SP520, 10m. Ian Ray VK3AQJ, QTHR, Ph. (052) 78 7751.

SSTV Camera and Monitor, robot model, 80A and 70A, 500V. VK3NEV, QTHR, Ph. (060) 7112 ask for 295.

Deceased Estate, all equipment in excellent cond.: Hipower Apadac regulated P/S 12V DC; Weller 100W 81000 soldering gun; Yaesu hand mic., suit 101, 101Z, 301, etc.; Yaesu FT301 solid state txcvr.; Leeson base station power unit, good cond.; home brew antenna tuner for balanced lines; Dick Smith Q1140 multimeter with case, as new; Lanson FT1202 stereo/mono headphones; Portablab 5000 pwr/swr field strength unit; brass band key; paddle keyer kit, nearly complete; TE101 signal injector; CB receiving booster; tool box, 3 split trays, complete with components, suit hobbyist; PA speakers, suit siren, burglar alarm, etc. (2 off); hobby boxes, two sizes; Yaesu RS-22 gutter grip and complete set of Novice resonators 10-15-80; Jometrix Sling, ray CB stereo, etc.; quarter wave whip, suit 101 stainless steel; best offer. Mrs. J. H. Hayhoe, 11 Skellington St., Heidelberg West 3081.

IC201, 144-148 MHz, tunable CW, SSB, FM, inbuilt pre-amp., with power supply and mic., \$395. VK3BOB, QTHR. Ph. (03) 578 7441.

TS820, digital readout, DC-DC supply, CW filter (not fitted), MC 10 mic., good cond., \$790, ONO, for quick sale. VK2DAB, QTHR. Ph. (069) 62 5001 Bus., (069) 62 5163 AH.

Drake TR4CW txcvr., with remote VFO, noise blanker and power supply, \$900. QYS to SM-land. Ralph VK4QK, QTHR. Ph. (07) 261 1626.

Shack Clear-out, Deceased Estate Late VK3AHR: Collins KM2 transceiver with power supply, mic., Morse key, insecticide book and spare valves; 70 ft. winch operated tilt-over tower with Hy-gain 204BA antenna, CDE rotator with controller/inicator, control and coax cables, \$500 (will assist to dismantle); IC22A 2m transceiver with mic., nicads and charger, 11 crystals, instructions and orig. packing, \$150; Trio CO1303G monitroscope, \$150; aerial equipment as follows: 3 element 20m beam with concentric pipe supports, dismantled; rotor for loop pitch, pair selsyns, trap dipole 20, 40, 80m with balun and coax, dummy aerial with 0-4 RF amp switch, MFJ antenna tuner, B & W 5-way antenna switch, Keithkit SWR bridge, 50m UR67 coax cable, multimeters, transformers, museum pieces and all usual ham shack sundries mysterious indeed to this executor. Ph. (03) 844 3879 or (03) 49 2810 Bus.

Atlas 215 HF 5-band Txcvr., in good cond., small size (3½ x 9½ x 9½ in.), in good cond. and VK4XT, QTHR. Ph. (074) 62 2389.

ICOM IC701/IC701P/IC6M2 Mic., as new, orig. carton, \$1,100. VK3BAX, QTHR. Ph. (052) 9 5949 Bus., (052) 9 7401 AH.

Yaesu FT7, complete, as new, little use, incl. fixed xtal 28.320 Sydney net freq., plus Leson TW232 mic., \$450 (will not separate); converted CB super Panther, thumbwheel freq. selection, complete coverage Novice Phone section 10 band, mic., etc., with JD5050 freq. counter, \$199; hand Electronics HF-100 linear amp., \$150; Ideal Novice rig, well VKNBA, QTHR. Ph. (02) 634 1882 AH Castle Hill.

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Yagi-Hen TH6DX3 Triband Beam, \$235; 80-10m trap vertical, \$60; Comdel speech processor, \$65, ONO. VK3KWC, QTHR. Ph. (03) 379 1152.

Yaesu FRDX400 Rx (most options) and FL2008 transmitter, both mechanical filter systems, can be used as transceiver, spare tubes, good order, \$400; KW107 super match antenna tuner, \$150; Barfow-Wadley XCR-30, \$160, 2 received; and AC power supply, good order, \$160. VK3JJ, QTHR. Ph. (03) 93 6505.

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Tx TU units, Tx cond., Tx coils, Hi-voltage transformers, chokes, valve tester, valves, speakers, Hi-selectivity IFs, sundry parts. Offers to Frank VK3CAF, QTHR. Ph. (03) 89 5031 AH, 661 2294 bus.

ASCII Teletype Model 38ASR tractor feed terminal fitted with full duplex WRU, break and RS232 interface, recently reconditioned by STC, operates at 100 bauds and is complete with integral tape units and console stand, very good order, ideal for use as a computer terminal for hard copy and access or use in shack, \$2,500; scanning model SX100, covers all amateur VHF frequencies, as advertised in QRZ, has no, further use due to a change in AR; RTTY Flesher regenerative speed converter model T1728, will cover 60, 67, 75 and 100 w.p.m. in baudot and 100 baud in ASCII, full transceiver with fully variable character output rate, memory and preload functions, only 3 months old, new, perfect cond., see page 15 Feb. AR, \$250. Ian Foster VK3ST, Ph. (051) 52 4027.

Philips SC108 100W 88B TxF Txcvr, 4 channel, 11H, Ferrit duty power supplies, ex computer, with 5" H, duty units 6V25A (easily converted to 12V), 90V, 28V 20A, \$140, 3.6 kW 240/240 computer mains isolation TFR with screen, \$65, ICL401 visual display unit, \$80, CGC 9450 disc drive with packs, \$200. Friden 4321 mag data recorder with tapes, \$200. VK4FE, QTHR. Ph. (07) 38 1803.

Yaesu FT101E, late model with front panel control of speech processing level, AC/DC, with cooling fan and accessory 600 Hz filter for CW/RTTY, 100-10m Tx, plus 10 MHz and 27 MHz Rx only, has had little use, excellent condition. Overseas travel and study costs comp. sale, \$575 or reasonable offer. Alan Beagley VK4FAE, 322 Birdwood Tce., Toowoomba 4066, Ph. (07) 371 4399 AH.

Yaesu FT101B Txcvr with G3LLI speech processor, external VCO, SWR meter, mic., manuals and spare valves, perfect working order, \$600. Ray VK3RF, Ph. (03) 678 5305.

Kenwood TS520 Txcvr., exc. cond., in orig. carton, 12/240V power supply, mic., spare xtal's, accessories and manual, \$475. Multi-2000A all mode synthesised 2m Txcvr., 12/240V pwr. supply, ideal for Oscar, \$345. Communicator VHF Rx, 12/240V, \$40. Hygain 27 MHz mobiles (15 W/23 chan. PLL synth., brand new in cartons (suit 6m etc.), \$30 each. Wal VK2ZV, QTHR. Ph. (02) 211 4444 bus. Dc volts 1V-100V, 125A. Ant. coupler HCOM50, 3.5-30 MHz, \$80. Transverter TV502, 144-148 MHz, TS520 companion unit, \$150.18AVT vertical ant., \$60. All with handbooks. VK4MQ (QTHR as for VK4AOM), Ph. (075) 31 7923.

Tri TR2200Q Portable 2m FM Txcvr, xtal for tris. 1-8 and simplex 40, 50, 51, \$185; Eddystone Rx 88BA with speaker, instruction manual, g.c., \$100; HW17A 2m Tx/Rx, AM/FM, Rx tunable 144-148 MHz, Tx xtal working, needs attention, comprehensive manual, \$50. VK3VB, Ph. (03) 781 2614.

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Deceased Estate: Hygain, 18HT, Hytower, complete with manual, 160m coil and coax, \$150. 4 Johnson and cond., 2-11 pf, 1 kW, \$2 ea. 2 ceramic 8292 type sockets, \$2 ea. Johnson spinner knobs — 1/4" 11mm, 2-1/4" 11mm, 3-1/4" 11mm, \$1.50 each. Woden potted unit. 60W trans., \$10. Collins 310-G2-P70, 80m excit. VFO on 160m, calib. dial, \$40. Heath DX100B, mod. for xtal, comp. with manual and orig. parts, offer, 240V AC Hi V PS in cabinet, 700, 500, 450V DC, 1000V meter switched, \$200. 40. Postage extra. VK3CP, QTHR. Ph. (03) 859 2614.

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Hygain Hy-Quad Type 244 Antenna, partly assembled but never installed, as new cond., \$200. ONO, buyer to collect. VK3XY, QTHR. Ph. (03) 557 1265.

Wilson System 1, 4 el. trapped yagi on 20, 15, 10m, separate reflector on 10m, exc. performance, as new cond., \$200. Enquiries to B. Bathols VK3JUV, QTHR. Ph. (03) 90 6424 evenings.

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Receiver 51J4, R392/URR, R392/URR, SP600JX, also transmitter KWS-1, 32V-1, 32V-2, 32V-3, or similar. VK3QQ, QTHR.

MN26C Compass Receiver, circuit diagram and other relevant information, appreciate any help and gladly pay costs photostat, postage, etc. VK3AHU, QTHR. Ph. (03) 328 2282 Bus., (03) 534 5616 evenings.

Neon Type Globe NL6S, suit FLX400 Tx. VK2NSE, QTHR.

Does anyone have conversion information, circuit diagram or service manual on a Pye Victor type MFV 529 or similar high band carbon? Can be used on 2m, if so I will be glad to pay any reasonable costs. Ph. (02) 73 2652 AH.

External VFO for FT75B. Price, etc., to D. Robins VKNSFB, 24 William St., Clare 5453, Ph. (08) 42 2517.

2m Meteor Scatter Skeds, suitable station would require a minimum of 100W out, to 10 dB min, aerial system (incl. coax), low noise pre-amp. in front of any commercial 2m transceiver, would need to be 1,000 to 1,000 km from Brisbane. If interested please contact Allan VK4ZRF, QTHR.

Assistance Wanted: I urgently need a good 38P1 or 3AP1 CRO tube happy to pay and will accept any reverse charge calls. VK3NXX, QTHR. Ph. (03) 527 4029.

Borrow copy of AR July 1971 and October 1971, or photostat of articles therein on noise bridge, will pay all copying and postage charges. VK2AJV, QTHR. Ph. (02) 481 2134.

Picture Tube, CRT 140CB4, for Sony model TV5-303E, VK3HL, QTHR. Ph. (052) 73 0488, 75 3398 AH.

Bege, Borrow or Buy: operator's or service manual for AWA oscilloscope, type 1A50031. N. May L31096, Trail 7/24 Blyth St., Brunswick 3056, Ph. (03) 380 5810.

Old-Time Radio Fans: are you a collector of old-time radio or TV programmes (either domestic or overseas)? Do you have air checks or interesting commercials from Australian or foreign sources? VK2ATJ, Box 140, Kensington, NSW 2033.

4CX250B Tubes and Sockets, HT transformer, approx. 1500V-0-1500V at 500 mA, FHJ4 helix connectors. QTHR or phone (03) 338 9284.

Rx Section of Kenwood KP202 hand-held 2m FM transceiver, parts required in particular are RF and mixer transformers in front end. VK2BDD, QTHR. Ph. (02) 529 4356.

Circuit or copy for Comm. Rx, Type, Model HCR-62, letters I.E. on main dial, also 3.5 MHz band edge crystal. VK2QO, QTHR. Ph. (02) 644 5712.

Handbooks (or copies) for freq. meters TS232/UR and BC-221-AL. Front panel "hold in" screws for BC221, VK3FBF, QTHR. Ph. (03) 933 1638.

TRADE HAMAD

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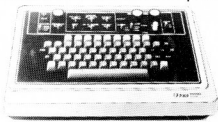
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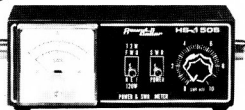
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